FOREST THINNING BILL HEADS TO SENATE 4 | BROWN CLOUD CONFOUNDS WARMING THEORIES 14 | SCIENTISTS & BIOTECH 10-11

Environment & Climate News

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Whitman Resigns EPA Post

James M. Taylor

A contentious period in EPA history came to a close as Administrator Christie Whitman announced on May 21 she would resign from her position effective June 27.

Whitman's reign at EPA was marked by sharp criticism from virtually all sides. Free-market environmentalists asserted she frequently worked at cross-purposes with the Bush administration and market-based environmental principles, while lberal environmental advocacy groups alleged she too often compromised her beliefs to comport with the Bush policy agenda.

Whitman expressed no regrets upon announcing her resignation. She insisted in a meeting with a small group of reporters that she had "always been on the same page" with President George W. Bush.

Bush expressed his appreciation for Whitman's service. "Christie Todd has been a dedicated and tireless fighter for new and innovative policies for cleaner air, purer water, and better-protected land," said Bush.

Outside the Bush administration, reaction to Whitman's announcement was mixed.

See WHITMAN p. 7

Reuters

Christine Todd Whitman is resigning from her job as administrator of the Environmental Protection Agency and will return to her home in New Jersey, the agency announced on May 21, 2003. President George W. Bush watches as Whitman speaks at an event honoring environmental youth award winners in this April 24, 2001 file photo.

Analysis Finds Our Climate Unremarkable

Willie Soon and Sallie Baliunas

An analysis of more than 240 studies of the Earth's climate over the past 1,000 years suggests the twentieth century was not the hottest and that climate varies naturally. The analysis adds to the growing body of knowledge challenging previous assessments, based

See WARMING p. 13

U.S.-Led Coalition Challenges Biotech Ban

James M. Taylor

The World Trade Organization (WTO) will decide whether a European Union ban on genetically enhanced food violates free trade principles, as is alleged in a complaint filed May 13 by the United States and a dozen other nations.

See CHALLENGE p. 11

Inhofe: Chemical Security Is "Top Priority"

Bonner R. Cohen

Underscoring the need to provide the greatest possible protection against terrorist attacks to the nation's more than 1,500 chemical facilities, Senator James Inhofe (R-Oklahoma) has introduced the "Chemical Facilities Security Act of 2003." Inhofe is chairman of the Senate Environment & Public Works Committee, which has jurisdiction over the issue.

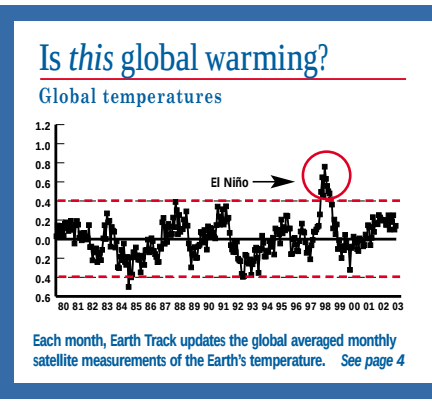
Cosponsored by Sen. Zell Miller (D-Georgia), the bill requires chemical facilities to complete vulnerability assessments and site security plans and imposes stiff penalties for companies that fail to comply with the law.

Inhofe noted the bill is the product of extensive discussions with security experts and has the support of the Bush administration. Both Inhofe and Miller

See CHEMICAL p. 3

INSIDE E&CN

2 Low-Till Farming Better than Organic
5 GAO Issues Forest-Thinning Study
6 Census: U.S. Has Much Open Space
8 Decades of Cheap Oil Ahead
12 Climate Change: More Research Needed
13 Warming Report Based on Junk Science
16 Particulate Matter Standard Challenged
17 Cal. Coastal Commission in Court



Each month, Earth Track updates the global averaged monthly satellite measurements of the Earth's temperature. *See page 4*

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"Never-till" Farming— A Boon to the Environment

USDA photo

Dennis T. Avery

For 60 years, organic farmers have claimed they hold the secret to human sustainability. They claim modern high-tech farming "ruins soils," and that, as they do, we must bar chemical fertilizers and synthetic pesticides from all our crop fields.

New research, however, shows the biggest factor in soil health is a recently discovered gooey protein called glomalin, produced naturally in soil by the mychorrizal fungi that live on the roots of most plants. Organic farming not only has no advantage in producing soil health, but organic farmers destroy the glomalin with their frequent plowing to control weeds.

Plowing Harms Soil Health

Plowing destroys the long slender hyphae (feeding tubes) of the fungi. That suggests no-till farming and low-till farming, which rely on herbicides to control weeds, may be better ways to sustainable human food production than organic farming. Less plowing means more fungi living on the plant roots, more glomalin, and healthier soils.

Glomalin clumps soil particles together, preventing erosion and keeping soil carbon from escaping into the air. The clumps also become miniature storehouses for moisture and plant nutrients. It is glomalin that gives soil its "tilth"—a subtle texture that permits farmers and gardeners to judge good soil as the particles flow through their fingers.

Glomalin wasn't even discovered until 1996, by Dr. Sara Wright, a soil microbiologist at the government's Sustainable Agricultural Systems Laboratory in Beltsville, Maryland. We are still learning its importance and functions. Without glomalin, Wright says, soil would be just loose dust and bits of organic matter, all too susceptible to wind and water erosion.

She says glomalin probably wasn't discovered earlier because we thought humic acid was the source of soil tilth ... and because it takes a heroic effort to unbind the sticky glomalin from the soil particles and carbon it's attached to. (Wright uses a citrate bath plus heating to 250 degrees for at least an hour!)

Organic Farms Over-Plowed

Organic farms are plowed frequently, to control weeds. Organic farmers refuse to use the chemical weed-killers that make low-till farming effective. (Weeds have always been man's main competitors for food because they compete with crop plants for nutrients, water, and sunlight.)

"Organic farming not only has no advantage in producing soil health, but organic farmers destroy the biggest factor in soil health ... a recently discovered gooey protein called glomalin."

Wright found 2.7 milligrams of glomalin per gram of soil in a grass buffer strip at Beltsville, only 0.7 mg/g in an annually plowed field nearby, and 1.7 mg/g after the third year of a no-till test. She's found that glomalin levels increase steadily the longer the soils stay undisturbed, with as much as 15 mg/g in some undisturbed Mid-Atlantic grasslands. Herbicides were first developed in the 1970s, and some no-till fields have now been unplowed for nearly 30 years.

Glomalin is also encouraged by minimizing phosphorous applied to the soil, and that further penalizes organic farming. If organic farmers apply enough manure to supply adequate nitrogen for their crops, the manure will probably contain too much phosphorous for the mycorrhizal fungi to flourish.

Organic farmers do make extensive use of cover crops, which help improve glomalin levels. (The fungi need live plant roots to live on.) But Dan Towery of the Conservation Tillage Information Center points out that if conservation tillage already produces higher glomalin levels than plowed organic fields can sustain, using low-till with more cover crops should further increase chemical farming's glomalin advantage.

A study currently underway is finding low glomalin levels in Costa Rican tropical forest soils. "We think it's because of the higher temperatures and moisture" that break down glomalin, says Wright. This helps account for the historically low crop yields in most tropical agriculture.

No-till on the Rise

American farmers have already eliminated plowing on 37 percent of the nation's 297 million acres of cropland. About one-third of the reduced-till acreage has been converted since herbicide-resistant biotech crops have improved low-till weed control.

The discovery of glomalin's importance should stimulate new efforts to extend no-till farming, and to include more cover crops in the no-till systems (especially in the South with its longer growing seasons). Towery says he hopes it will encourage many farmers who currently use no-till intermittently (for example, no-tilling their soybeans but plowing their corn) to adopt a long-term "never-till" strategy that will maximize both soil health and erosion protection.

Glomalin may even help dampen the urge of city folks who've never grown crops to mandate low-yield organic farming.

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Experts Weigh in on Inhofe-Miller

James M. Taylor

The Inhofe-Miller chemical security bill is proving to be an example of the often-divisive nature of "compromise" legislation.

The Environmental Protection Agency claims the U.S. is home to more than 100 high-risk chemical facilities, where terrorist attacks could kill more than 1 million people, and another 700 facilities where terrorist attacks could kill 100,000 or more. Inhofe-Miller was drafted in response to that assessment, and as an alternative to extreme anti-chemical provisions in the rival Corzine bill.

But is any bill necessary to address the issue? Many experts don't think so.

"What should be debunked first," says Cato Institute adjunct scholar Steven Milloy, "are the EPA's disaster scenarios. They aren't 'worst case'—they're pure fantasy."

According to Milloy, EPA made numerous unrealistic assumptions in calculating potential chemical dispersions and resulting fatalities in a terrorist attack. "The agency, for example, pretended the wind would blow in a 360 degree radius from the site of a chemical release—that is, in all directions at the same time."

Milloy

Logomasini

EPA "assumes that every possible chemical container would be breached, releasing the maximum amount of chemicals, under the worst possible wind conditions, and that all safety and mitigation measures at the plant would fail," noted Angela Logomasini, director of risk and environmental policy at the Competitive Enterprise Institute.

"It's like concluding that millions of Americans are at risk every day from airplanes because hijackers could seize every commercial airplane in the air at once, on the busiest air travel day of the year, and crash every one of them into the nation's most populated buildings at their most vulnerable spots, when the buildings were fully populated and assuming that no one could evacuate the buildings."

"The EPA's worst-case scenarios are worthless as policymaking tools," agreed Milloy. "Their only use, it seems, is to terrorize the public—and isn't that part of what we're fighting in the first place?"

Nevertheless, to the extent Inhofe-Miller avoids the extreme measures advocated in the Corzine measure, some free-market environmentalists welcome the bill.

Logomasini said the Inhofe bill is unnecessary, due in large part to aggressive security enhancements spearheaded by the American Chemistry Council and already in place. Nevertheless "the fact that [supporters of the Inhofe bill] are moving away from toxics use reduction (banning and phasing out chemicals) should be praised.

"If environmentalists were truly interested in security, they would back the Inhofe bill," said Logomasini.

"But to get chemical plant security right," added Milloy, "it seems that we'll have to disinfect a debate already contaminated by bad facts and bad intentions."

James M. Taylor is managing editor of Environment & Climate News. *His email address is* **taylor@heartland.org**.

Chemical

from page 7

emphasized the pivotal role the bill gives to the new Department of Homeland Security (DHS) in implementing the legislation and developing standards to safeguard chemical plants from terrorist attacks.

Specifically, the Chemical Facilities Security Act of 2003 will:

- Impose mandatory requirements on the chemical industry. According to the guidelines established in the bill, companies will be required to conduct vulnerability assessments and develop security plans.
- Authorize the Secretary of Homeland Security to reject those plans if they are deemed inadequate to protect plants against terrorism. The secretary can require plant owners and operators to revise their plans and assessments to ensure adequate safety and protection.
- Allow other agencies, including the Environmental Protection Agency (EPA), to provide DHS with technical support.
- Require DHS to perform routine oversight of facilities to ensure compliance with the law.
- Authorize the secretary of DHS to petition the courts for injunctive relief in cases where companies fail to comply, which in practice could temporarily shut down a facility.
- Allow the secretary of DHS to impose civil penalties of $50,000 a day for each day a violation occurs and administrative penalties of up to $250,000.

Senator James Inhofe (R-Oklahoma)

Senator Zell Miller (D-Georgia)

Corzine Bill a Head-Fake

The Inhofe-Miller legislation stands in sharp contrast to the "Chemical Security Act" sponsored by Sen. Jon Corzine (D-New Jersey). Originally introduced in the aftermath of the September 11 attacks on the World Trade Center and Pentagon, and reintroduced (in modified form) earlier this year, the Corzine bill incorporates the anti-chemical tenets of liberal environmental activists into a bill ostensibly concerned with homeland security. The Corzine bill mandates the use of what it describes as "inherently safer technologies" in place of chemicals, whose use would be phased out or sharply reduced.

In calling for "inherently safer technologies," Corzine is echoing a theme trumpeted by some radical environmentalists for years. More than a decade ago, Greenpeace spearheaded a campaign whose slogan was "Chlorine Free by '93." While Greenpeace failed in its bid to rid the U.S. of chlorine by 1993, its campaign against the chemical has continued unabated, with homeland security serving as the latest pretext.

Chlorine's Role in Saving Lives

Because chlorine plays an essential role in public health and safety, any policy that would have as its goal a reduction in the use of chlorine would have a profound negative effect on society.

"[The] 'Chemical Facilities Security Act of 2003' ... is the product of extensive discussions with security experts and has the support of the Bush administration."

Chlorine-based disinfectants are used by 98 percent of modern water purification plants to make drinking water safe for human consumption. In addition, more than 85 percent of modern pharmaceuticals use chlorine in their manufacture. In medicine, its uses range from MRIs and other diagnostic devices to x-ray film, surgical tubing, and modern lightweight prosthetic limbs.

Iraq provides a chilling glimpse into a world devoid of chlorine. On April 29, UNICEF reported that, as a result of damage incurred during the recent war, pumping stations in southern Iraq were facing dwindling supplies of chlorine gas needed to purify water drawn from the Tigris and Euphrates rivers.

Urging U.S.-led coalition forces to accelerate chlorine gas deliveries to the pumping stations, U.N. spokesman Marc Vergara warned 4 million Iraqis were in danger of having untreated water pumped into their homes. He told the Associated Press that drinking unsafe water could cause cholera, dysentery, and diarrhea. "Diarrhea, which is annoying in the West, is deadly in this part of the world," he said, adding diarrhea is one of the leading causes of death among Iraqi children.

Protection of chemical plants from terrorist attacks is a key component of any strategy to provide for homeland security. But demonizing the chemicals stored in those facilities, with little thought to the societal consequences, is a sure way to undermine the very security Congress has been entrusted to provide.

Bonner R. Cohen is a senior fellow at the National Center for Public Policy Research in Washington, DC.

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Forest Thinning Bill Heads to Senate

James M. Taylor

The U.S. House of Representatives voted May 20 to ease bureaucratic obstacles to forest-thinning activities on 20 million acres of the nation's most fire-prone federal lands.

The bill has the backing of President George W. Bush and, if passed by the Senate, would expedite the often-lengthy administrative and judicial appeals processes that frequently kill forest management programs developed by the U.S. Forest Service.

Under the bill, the time period for plaintiffs to challenge forest-thinning plans would be reduced to 15 days. The bill would require judges to rule on forest-thinning lawsuits within 100 days.

The expedited process is necessary, say the bill's backers, because currently even a favorable ruling often has little positive effect, as it frequently comes too late to prevent catastrophic fires that occur while forest management plans are being challenged in court. The Forest Service and other supporters of the House legislation have accused environmental activist groups of deliberately abusing the process by filing repetitive suits to delay thinning projects until the damage has already occurred.

"Wildfires [in 2002] torched 7 million acres of forest in 15 states, killing 23 firefighters. The federal government spent $1.6 billion last year on fire-suppression efforts."

The measure passed by a vote of 256-170, with 42 Democrats joining 214 Republicans in support of the measure. Prior to passing the full House, the measure was approved with bipartisan support in several committees, including the Resources, Agriculture, and Judiciary committees.

Senate's Second Chance

House passage of the measure was expected. A similar bill passed the House last year but died in a conference committee with the Senate. Senate opponents of last year's bill claimed they shared an interest in preventing the damaging effects of forest fires, but did not want to make it difficult for anti-logging groups such as the Sierra Club to appeal Forest Service thinning projects. Senate opponents also preferred to focus thinning efforts in forests near human population centers. The House bill, by contrast, identifies and addresses forests most at risk of burning, regardless of their proximity to human population centers.

Last year's wildfire season was the second worst in 50 years. Wildfires torched 7 million acres of forest in 15 states, killing 23 firefighters. The federal government spent $1.6 billion last year on fire-suppression efforts.

This year's bill would affect only a small share of national forest acreage, serving as a pilot program and case study of the desirability and effectiveness of streamlining forest-management procedures in the most at-risk forests.

"For too many years, bureaucratic tangles and bad forest policy have prevented foresters from keeping our woodlands healthy and safe," said Bush in support of the House bill. He said forest-thinning restrictions have cost 47,000 timber jobs in California, Idaho, Montana, Oregon, and Washington and have closed 400 mills since 1989.

Fire and the Environment

"It is yet another example of the Bush administration rolling back environmental protections," claimed Rep. Tammy Baldwin (D-Wisconsin). "Now is the time for those who understand how important the environment is for future generations to stand up to the administration."

Scott McInnis (R-Colorado), who sponsored the bill, countered that true friends of the environment support the fire suppression focus of his measure. "Tragically, America's forests ... are being decimated at an alarming rate by large-scale catastrophic wildfire and massive outbreaks of disease and insect infestation. Each year, millions of acres of once-pristine forest land are ravaged by these pernicious wildland scourges."

McInnis says overzealous suppression of healthy, small-scale fires during most of the twentieth century has created unnaturally dense forests with an excessive amount of fire-nurturing underbrush. Clearing brush and thinning unnaturally dense forests, says McInnis, will return the land to its natural state. Without such a program, federal forests will continue to experience the recent cycle of wildfires so intense as to sterilize the soil and prevent rejuvenating growth for decades.

"The only thing standing in the way now is bureaucracy and red tape," said McInnis.

More Bureaucracy?

Randal O'Toole of the Thoreau Institute expressed concern that the House bill, despite its good intentions, would have little real impact on forest fires. The greater effect, O'Toole believes, would be to further expand the federal bureaucracy.

"Historically," O'Toole observed, "Congress has given the Forest Service a literal blank check to suppress fires. The agency has spent billions of dollars training firefighters, hiring equipment, and putting them in the field ready to fight fires. Yet the number of acres that burn each year have remained proportional to the extent of summer drought. As firefighters sometimes say, in a droughty year the Forest Service fights fires by dumping money on them until it rains—and then the rain puts out the fire.

"At the planned rate of 2.5 million acres a year, it will take decades to treat all of those acres," noted O'Toole. "Remember, until they are all treated, homes and other structures will still be at risk. Why not just treat the 6.9 million acres of land that are adjacent to those homes, which could be done in less than three years?

"The Healthy Forests Initiative is more accurately titled the Bureaucratic Bloat Initiative, as the only real beneficiaries of the program will be the Forest Service and, to a lesser extent, Department of the Interior bureaucracies. Fiscal conservatives shouldn't be surprised to learn that giving more money and power to government bureaucracies won't really solve the fire problem," O'Toole noted.

Senate Politics

Sen. Jon Kyl (R-Arizona) liked the idea of using the 20 million acres addressed by the House bill as a real-world testing ground to learn whether expedited thinning processes could quell catastrophic fires. However, Kyl predicted the bill would have a tough time making it through the Senate.

"I'm supposed to be upbeat and optimistic," Kyl said. "But the reality is that the politics here are so dominant. It's just a very politically driven proposition, and I don't know how you break through it and get anything done."

Kyl pointed out that only one Democratic senator, Dianne Feinstein of California, has consistently supported efforts to expedite thinning projects. The remaining Democrats, and several Northeastern Republicans, have deliberately avoided crossing anti-logging activist groups for fear of being branded anti-environment.

James M. Taylor is managing editor of Environment & Climate News. *His email address is* **taylor@heartland.org**.

GLOBAL SATELLITE TEMPERATURES

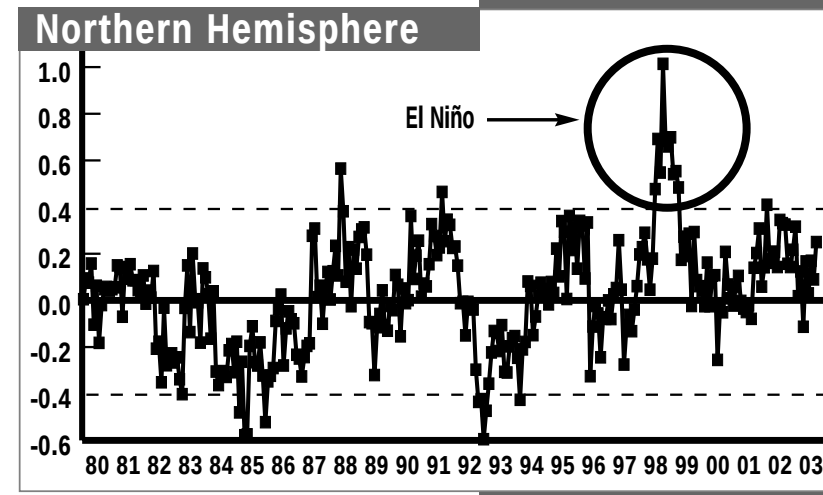
EARTH TRACK

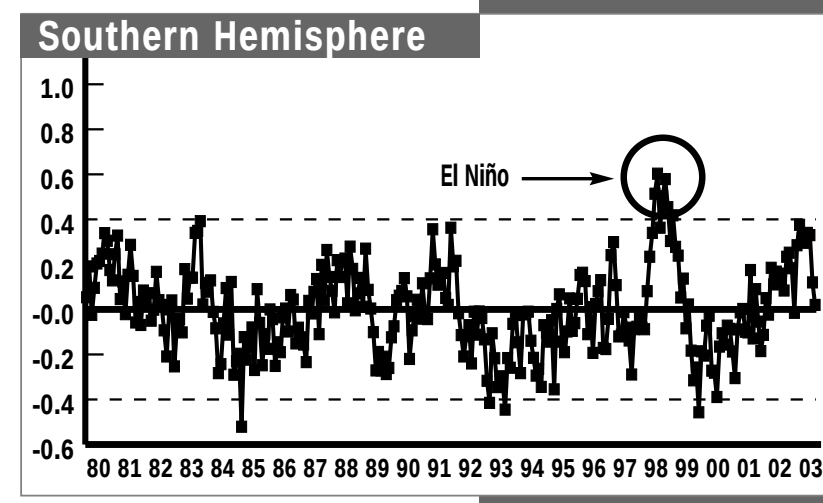
Each month, Earth Track updates the global averaged satellite measurements of the Earth's temperature. These numbers are important because they are real—not projections, forecasts, or guesses.

Global satellite measurements are made from a series of orbiting platforms that sense the average temperature in various atmospheric layers. Here, we present the lowest level, which climate models say should be warming. The satellite measurements are considered accurate to within 0.01°C.

MAY 2003

The global average temperature for May, shown on page 1, was 0.18°C above normal. The Southern Hemisphere's temperature departure, shown below, was 0.01°C above normal; the Northern Hemisphere's, also below, was 0.38°C above normal.





The data used to create these graphs can be found on the internet at http://vortex.nsstc.uah.edu/data/msu/t2lt/tlghmam_5.1.

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Looking for an outstanding speaker?

Who is Dr. Jay Lehr?

Dr. Jay Lehr is an internationally renowned motivational speaker, scientist, and author. He is considered the world's leading authority on groundwater hydrology. Dr. Lehr is currently Senior Scientist with Environmental Education Enterprises and Science Director for The Heartland Institute, a nonprofit think tank based in Chicago, Illinois.

"Jay Lehr is an outstanding communicator, his knowledge of his subject is superb and his delivery is very engaging. He held the rapt attention of our audience."

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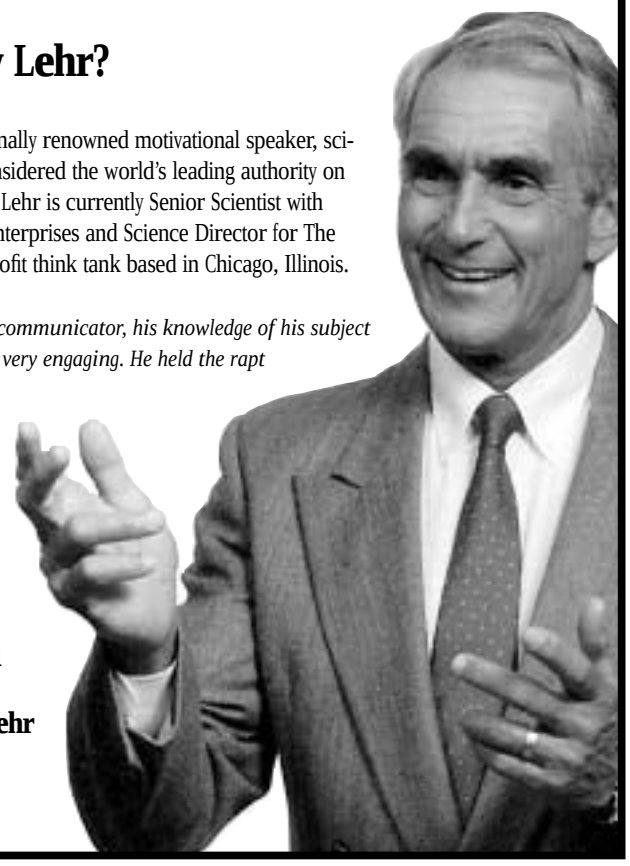

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GAO Forest-Thinning Study Sparks New Controversy

James M. Taylor

Supporters of President George W. Bush's Healthy Forests Initiative have a new study to cite as proof reforms are needed in the federal government's forest management effort. Opponents of the President's plan disagree, saying the study proves current procedures are working.

The study, released by the General Accounting Office (GAO) on May 15, found most federal forest-thinning proposals subject to third-party comment were appealed by environmental activists.

59 Percent Appealed

The GAO examined 762 U.S. Forest Service (USFS) proposals to thin forests and prevent fires during the past two years. According to the study, slightly more than half the proposals were not subject to third-party appeal. Of those proposals subject to appeal, third parties challenged 59 percent.

Appeals were filed most often by anti-logging groups, including the Sierra Club, Alliance for Wild Rockies, and Forest Conservation Council. According to the GAO, 84 interest groups filed more than 400 appeals of Forest Service proposals. The appeals delayed efforts to treat 900,000 acres of forests and cost the federal government millions of dollars to address.

"According to the GAO, 84 interest groups filed more than 400 appeals of Forest Service proposals. The appeals delayed efforts to treat 900,000 acres of forests and cost the federal government millions of dollars to address."

Forest Service officials estimate they spend nearly half their time, and $250 million each year, preparing for the appeals and procedural challenges launched by activists.

"The report demonstrates that the appeals needlessly delay federal efforts to prevent wildfires, and if the process is not streamlined, millions of acres will be lost this summer," said Senate Energy Committee Chairman Pete Domenici (R-New Mexico).

"This finding is nothing short of appalling, especially when you think of the catastrophic losses suffered in last year's horrific fire season alone," said House Resources Committee Chairman Richard Pombo (R-California).

Timber Sales Declining

Sean Cosgrove, a national forest policy specialist with the Sierra Club, defended the appeals. "We see these [forest management proposals] as outright commercial timber sales the Forest Service wants to call 'fuel-reduction' projects," said Cosgrove. Any attempts to restrict the appeals process would be "a ridiculous abuse of public trust," he claimed.

Forest Service Chief Dale Bosworth disputed that the Forest Service programs are designed to maximize timber sales. Speaking at an April 22 Earth Day event in San Francisco, Bosworth reported that timber cutting in the U.S. has fallen roughly 84 percent during the past two decades, from 12 billion board feet to just 2 billion board feet per year. Bosworth called anti-logging arguments a "bogus debate" and a "diversion" designed to divert attention away from the true issues.

Inaction Causing Wildfires

Rep. Jim Gibbons (R-Nevada) put the GAO study in the context of a forest-thinning bill sponsored by Colorado Republican Scott McInnis and passed by the House on May 20. According to Gibbons, the GAO findings should provide sufficient evidence for the Senate to similarly pass the bill, "although watching millions of acres of our precious forests turned into charcoal last year should have been evidence enough."

"Communities such as Flagstaff, Arizona, and Klamath Falls, Oregon, no longer can afford to have sound forest management plans stifled by extremists and their frivolous challenges until fire season arrives and it's too late to help," said Charli Coon, an energy and environment analyst with The Heritage Foundation.

Adding support to the GAO study, Arizona's *East Valley Tribune* reported on April 29 its findings from an examination of 10 years of court records and Forest Service documents.

"Almost every major forest-thinning project in Arizona has been blocked by a near-constant chain of lawsuits brought by environmental groups," the newspaper noted.

"You've created a situation where there is unlimited opportunity to challenge things successfully, at least to the extent that you can delay it for two, three, or four years," Pat Jackson, an appeals and litigation officer for the Forest Service, told the *Tribune*.

"We can remove some of the trees and lower the risk of catastrophic fire, or we can do nothing and we can watch them burn," said Forest Service Chief Bosworth.

James M. Taylor is managing editor of Environment & Climate News. *His email address is* **taylor@heartland.org**.

MORE INFORMATION

The 43-page GAO study, *Information on Forest Service Decisions Involving Fuels Reduction Activities*, is available through *PolicyBot*. Point your Web browser to **http://www.heartland.org**, click on the *PolicyBot* icon, and search for document **#12344**.

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Census Bureau: 94.6 Percent of U.S. Is Rural Open Space

Randal O'Toole

Data newly available from the 2000 Census show that at least 94.6 percent of the United States is rural open space, calling into question one of the most common arguments made in defense of smart growth and compact urban development: that we are "running out" of open space.

The Census Bureau counts population and land area in a variety of categories:

- *Urbanized areas* include contiguous areas of 50,000 people or more at densities of 1,000 people per square mile or more;
- *Urban clusters* include contiguous areas of 2,500 to 50,000 people at densities of 1,000 people per square mile or more;
- *Places* include, in addition to the above, any incorporated area or other concentrations of people identified by the Census Bureau.

Specific definitions of these and other Census terms can be found on the Internet at **http://www.census.gov/geo/www/tiger/glossary.html**.

Urbanization on the Rise

More than two out of three Americans live in urbanized areas. These areas collectively cover 2 percent of the nation's land area. Counting urbanized areas and urban clusters together, nearly four out of five Americans live in an urban setting. Urbanized areas and urban clusters cover 2.6 percent of the nation's land.

Remaining "places" account for just 4.4 percent of the U.S. population, but they cover 2.8 percent of the land. Their density is far lower than the density of urbanized areas and urban clusters. The average urbanized area has nearly 2,700 people per square mile, and the average urban cluster has close to 1,500 people per square mile. But the average place (outside of urban areas) has just 133 people per square mile.

In many cases, this is because small towns have large corporate boundaries, only portions of which are occupied. This is most noticeable in Alaska, where many cities have legal boundaries that include thousands of square miles of unoccupied land. As a result, the density of Alaska's non-urban places averages just 7 people per square mile.

Non-urban place densities in Arizona, California, Hawaii, Montana, Nevada, and Wyoming average between 30 and 100 people per square mile. In all other states except Nebraska, non-urban place densities range from 100 to 500 people per square mile. Nebraska is the only state whose non-urban places approach urban densities: 805 people per square mile.

So are places "developed"? The Census Bureau counts them as "rural." Only people living in urbanized areas or urban clusters are counted as "urban." At the same time, a town of 1,000 people is obviously not "rural open space." Conservatively, only those areas outside of any "place" can be considered rural open space. But it is clear that large portions of the rural places are also rural open space.

Together, urbanized areas, urban clusters, and rural places occupy 5.4 percent of the nation's land, while urban areas alone cover just 2.6 percent. Rural open space thus covers between 94.6 and 97.4 percent of the land in the United States.

State-specific Analysis

On a state-by-state basis:

- Four states—Connecticut, Massachusetts, New Jersey, and Rhode Island—are 30 to 40 percent urbanized and, counting rural places, 40 to 44 percent developed.
- Delaware and Maryland are 15 to 20 percent urbanized and 18 to 23 percent developed.
- Florida is 11 percent urbanized and 16 percent developed.
- Six states—New Hampshire, New York, North Carolina, Ohio, Pennsylvania, and Tennessee—are 6 to 10 percent urbanized and 10 to 13 percent developed.
- All other states are less than 7 percent urbanized and 10 percent developed.

Although California is the nation's most populated state, it is hardly running out of land. More than 94 percent of Californians live in urban areas that cover just 5.1 percent of the state. When rural places are added, no more than 8.6 percent of the state is developed. Since California's rural places have an average density of just 93 people per square mile, most of their land area probably qualifies as rural open space. The nation's second-most populated state, Texas, is even less heavily developed: 2.7 percent urbanized and 5.0 percent developed.

Unfortunately, data from the 2000 Census are not comparable with numbers from the 1990 Census because the Census Bureau changed many of its definitions. Among other things, urbanized areas were redefined to exclude many undeveloped areas. This led, on average, to a 10 percent increase in population density of urbanized areas.

Despite growing populations, the 2000 Census reported many areas were smaller than measured by the 1990 Census. The new data are probably more accurate, but it is difficult to tell from them how fast land is being urbanized.

Randal O'Toole is senior economist with the Thoreau Institute and author of the recent book, The Vanishing Automobile and Other Urban Myths. *His email address is* **rot@ti.org**; *the Thoreau Institute's Web site is at* **http://www.ti.org**.

MORE INFORMATION

An Excel spreadsheet with complete data on land areas and populations of urbanized areas, clusters, rural places, and other rural land by state can be downloaded from **http://americandreamcoalition.org/censusurbanareas.xls**. A comparison of the Census results with the 1997 Natural Resources Inventory can be found at **http://americandreamcoalition.org/openspace.html**.

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Whitman Resigns

from page 1

Business as Usual
"She wasn't our choice," said Myron Ebell, general counsel for the Competitive Enterprise Institute, a free-market think tank. "One thing we liked, though, is that she spent a lot of time on foreign travel, and wasn't as active an administrator as she might have been."

"Whitman presided over two years of business as usual at the EPA," said Jonathan Adler, assistant professor of law at Case Western Reserve University. "The agency continued to promulgate new regulations tightening existing regulatory programs, and made no effort to rethink or reinvent federal environmental policy. As a former governor, one would have thought that Whitman would be more sensitive to the needs and concerns of state and local governments.

"Environmental regulation is excessively centralized," Adler continued, "and Whitman missed a tremendous opportunity to introduce more flexibility and innovation to environmental policy by decentralizing regulatory programs and giving more authority to the states."

"Environmental regulation is excessively centralized, and Whitman missed a tremendous opportunity to introduce more flexibility and innovation to environmental policy ..."

Jonathan Adler
Assistant Professor of Law
Case Western Reserve University

Improved Cooperation
"We think she did a lot to repair the relationship between EPA and industry," said Jeffrey Marks, director of air quality for the National Association of Manufacturers. "She tried to replace the traditional command-and-control approach with more of a partnership."

"Administrator Whitman changed the EPA by developing a more cooperative relationship with the regulated community," agreed American Chemistry Council President Greg Lebedev. "Administrator Whitman understood that America can protect the environment and the U.S. economy at the same time. President Bush faces a great challenge in finding a similarly capable administrator."

Toeing the Line
"It's unfortunate that after the Bush administration picked someone with environmental credentials to head the EPA, she wasn't given the power to do the job," said Sierra Club Executive Director Carl Pope.

"We don't blame her," said Gregory Wetstone, advocacy director for the Natural Resources Defense Council, "but she's been the public face" of many Bush administration environmental policies the NRDC did not support.

"I leave knowing that we have made a positive difference and that we have set the agency on a course that will result in continued environmental improvement," Whitman said.

"It has been a singular honor to be entrusted with the responsibility to lead the EPA in its effort to leave America's air cleaner, its water purer, and this land better protected than it was when this administration took office," she added.

James M. Taylor is managing editor of Environment & Climate News. *His email address is* **taylor@heartland.org**.

EPA Scores Major Enforcement Victories

James M. Taylor
The Environmental Protection Agency has announced several landmark enforcement actions, putting industry on notice that the agency is as vigilant as ever.

Alcoa, ADM Settle Charges
On April 9, EPA announced agricultural leader Archer Daniels Midland agreed to cut thousands of tons of emissions from 52 plants nationwide to settle EPA pollution claims. The emission reductions are expected to cost the company $340 million.

Additionally, ADM will spend $6.3 million to retrofit school bus diesel engines and will pay EPA a $4.6 million civil penalty.

EPA had asserted ADM failed to accurately estimate emissions from some of its facilities and failed to comply with Clean Air Act mandates to install advanced pollution-control technology when upgrading its plants.

While plants in several states will be affected, Illinois will see the most change, with eight plants subject to the new emission reductions. In Illinois alone, ADM plans to spend $88 million to upgrade emission controls in accordance with the settlement.

"Obviously it's going to have a positive impact on air pollution in Illinois," said Brian Urbaszewski, director of environmental health for the American Lung Association of Metropolitan Chicago. "People will be breathing easier."

"With this agreement, ADM is receiving a clean slate from the government," reported ADM spokeswoman Karla Miller.

Also on April 9, EPA announced that Pittsburgh-based Alcoa Inc. will spend $330 million to install state-of-the-art pollution control technology at its aluminum production facility in Rockdale, Texas. The Rockdale plant contains the largest industrial boiler in the U.S. and, according to EPA, is the nation's largest non-utility source of NOx and SO2 emissions.

In addition to the $330 million for pollution abatement, Alcoa agreed to spend $2.5 million on conservation easements around the Rockdale facility and to pay a $1.5 million civil fine.

"These cases are a significant indication that enforcement continues aggressively at the agency," said EPA spokesman Joe Martyak.

Zuma Press

Alcoa headquarters in Pittsburgh, Pennsylvania.

The cases "demonstrate how much can be achieved when environmental laws are enforced as they are written," said the Natural Resources Defense Council and Environmental Integrity Project in a joint press release.

"Let no one think that we won't enforce the law," added outgoing EPA Administrator Christie Whitman.

Virginia Electric Agrees to Record Settlement
Less than two weeks later, on April 21, EPA announced the largest-ever settlement under the Clean Air Act. Under the terms of the agreement, Virginia Electric Power Company will spend $1.2 billion to slash pollution by 70 percent at eight coal-fired facilities.

EPA had alleged emissions at the facilities polluted the air downwind in New York City and several Northeastern states.

"These massive reductions in pollution will benefit not only the citizens of Virginia and West Virginia, but also the states in the Northeast to which windblown emissions of these pollutants are transported," said Tom Sansonnetti, the assistant attorney general who oversees environmental issues.

"As a result of this agreement, our citizens will be able to breathe easier, our forests and waterways will face less stress as acid rain is diminished, and we will all be able to see farther and more clearly in our national parks as soot and other particulate matter is removed from the air," Whitman said.

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Oil Becoming More Abundant

Political, scientific developments promise decades of cheap oil

James M. Taylor

Political developments in the Middle East are likely to bring the world's largest oil reserves into production after decades of neglect. At the same time, new scientific advances are making the recovery of enormous Canadian oil deposits economically feasible.

As a result, the supply of cheap oil that has underwritten western prosperity for decades will continue long into the future. Arguments for a transformation to expensive renewables will have to made on non-economic grounds.

Energy Prices and Prosperity

The price of energy, economists have long observed, has a direct and significant impact on economic performance. "A cheap supply of oil," noted the *London Guardian* in the days leading up to the Second Gulf War, "underwrote western prosperity in the golden decades of the 1950s and 1960s." The same could be said for the 1980s and 1990s. Conversely, notes the *Guardian*, oil price spikes in the 1970s and in 1990 prompted widescale western recessions.

"Tar sands in Canada are believed to hold 315 billion barrels of recoverable oil—'enough to supply all U.S. import needs for the next 50 years.'"

Proponents of such expensive oil alternatives as solar, wind, and hydrogen frequently argue a switch to renewables is necessary now because world oil reserves will soon be exhausted. A 1998 *Scientific American* article, "The End of Cheap Oil," to which many anti-petroleum Web sites link, asserts "world production of conventional oil will peak during the first decade of the 21st century." Accordingly, "what our society does face, and soon, is the end of the abundant and cheap oil on which all industrial nations depend." The solution, according to the article, is to switch to expensive renewables now.

Predictions of a "looming oil crisis" have been made for decades and repeatedly proven wrong. Recent political and scientific developments make it unlikely such predictions will ever come true.

Iraqi Oil Reserves

While the war in Iraq has saddled the American economy with added short-term debt, it has also resulted in a promising outlook for world oil prices. The May 19 issue of *Time* magazine noted Iraq boasts the world's most prolific oil wells and has the potential to become the world's largest producer. Although abundant oil reserves were identified in Iraq in the 1920s, for a variety of political reasons, *Time* noted, "Iraq has never come close to achieving its potential."

In the post-Saddam era, *Time* reported, an influential group of former Iraqi exiles "has concluded that the country needs to double its output by the end of the decade to 'invigorate Iraq's economy and lift the Iraqi people out of a future of impoverishment.'"

With almost limitless oil reserves, the technology to tap those reserves at least as inexpensively as does Saudi Arabia, and the political will to crank up production, the new Iraq is poised to become a key player in the world oil marketplace. Those developments are likely to ensure a return to the low oil prices of the 1990s, which were largely responsible for record economic expansion in the U.S. without the threat of inflation.

Canadian Tar Sands

But international politics are not the sole reason for energy optimism: Scientific advances are having a similarly positive effect on energy availability.

Eighty years ago, at roughly the same time the world's largest oil reserves were discovered in Iraq, scientists devised a way to extract crude oil from tar sand. The advance was theoretically significant because tar sands offer the promise of almost unthinkable energy abundance.

Tar sands in a 250-mile radius of Canada's Athanabasca wilderness alone are believed to hold 315 billion barrels of recoverable oil—"enough to supply all U.S. import needs for the next 50 years," reported the March 3 issue of *Forbes* magazine.

However, "scientifically possible" and "economically feasible" do not always go hand-in-hand. Until recently, producing oil from tar sands has been prohibitively expensive. But that is changing.

In 1991, reports the March 3, 2003 issue of *Forbes* magazine, Richard George began streamlining the methods to extract oil from tar sand. Since that time, George's Suncor Energy company has reduced operating costs from $15 per barrel to $7 per barrel, and the costs are still falling. Operating costs to extract conventional North American oil are roughly $3.60 per barrel.

Although its operating costs remain higher than those experienced by conventional oil operations, Suncor is gaining an economic advantage in other ways. Royalty and capital costs approach $10 per barrel for conventional North American oil, but barely top $4 per barrel for oil extracted from tar sand. Suncor's pre-tax earnings reach $13.45 per barrel, versus $9.13 per barrel for its conventional oil rivals. Accordingly, enormous, previously untapped oil reserves are poised to enter the global market.

James M. Taylor is managing editor of Environment & Climate News. *His email address is* **taylor@heartland.org**.

MORE INFORMATION

The March 3, 2003 *Forbes* article can be found at **http:// finance.lycos.com/home/news/story.asp?story=31886004**.

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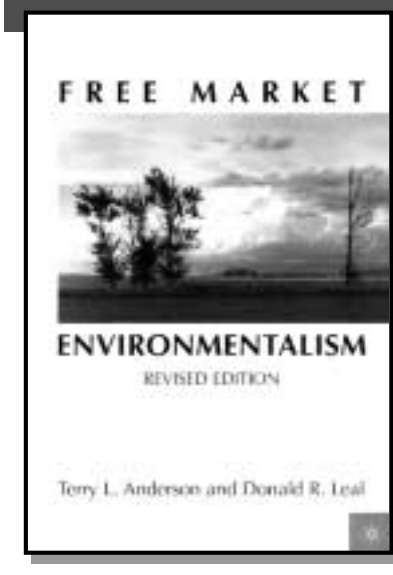

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GM Will Offer Displacement-on-Demand Engines

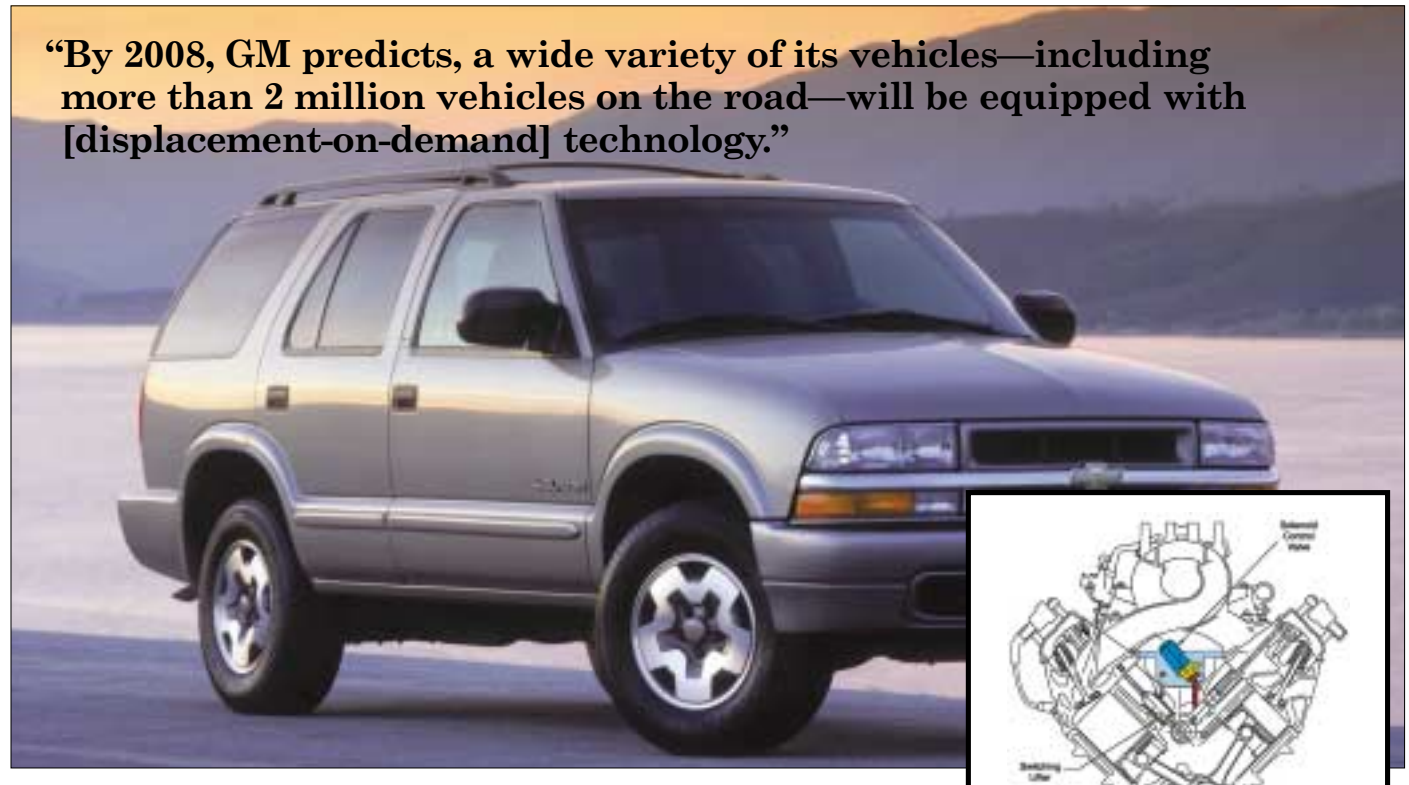
James M. Taylor

General Motors Corporation is introducing a new engine technology that increases fuel economy without negatively affecting performance or passenger safety. The company on May 8 announced it will offer displacement-on-demand engines beginning with some of its model year 2005 vehicles.

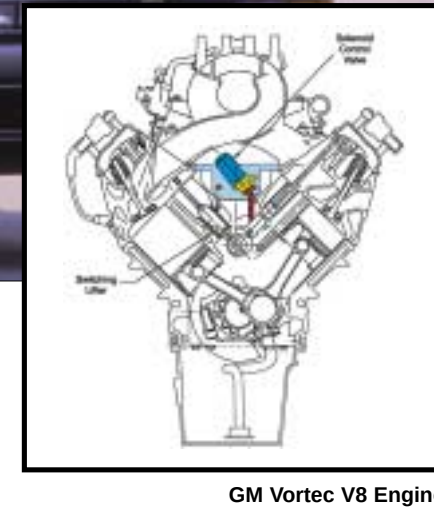
Displacement-on-demand (DOD) enhances fuel economy by shutting down half of a vehicle's cylinders when those cylinders are not needed. Current engine technology sends fuel to every cylinder regardless of whether all are contributing to performance at a given time.

Typically, all of a vehicle's cylinders are employed while accelerating from a standstill, climbing a hill, or passing traffic. At a steady cruising speed, DOD vehicles would run on only half their cylinders, increasing fuel economy by nearly 10 percent.

Past efforts to improve fuel economy have come at significant cost to performance and safety. Efforts to save fuel by downsizing engines have been rejected by consumers, who typically prefer more powerful, responsive engines. Efforts to save fuel by building lighter vehicles have endangered drivers and passengers, as lighter materials are less crashworthy. *USA Today* has reported that 7,700 people have died for every mile-per-gallon improvement in fuel economy.



"By 2008, GM predicts, a wide variety of its vehicles—including more than 2 million vehicles on the road—will be equipped with [displacement-on-demand] technology."



GM Vortec V8 Engine

GM said it will offer DOD on the 2005 midsize Chevy TrailBlazer, GMC Envoy XL, and GMC Envoy XUV sport utility vehicles. In 2006, GM will offer DOD technology for several midsize passenger cars. By 2008, GM predicts, a wide variety of its vehicles—including more than 2 million vehicles on the road—will be equipped with DOD technology.

James M. Taylor is managing editor of Environment & Climate News. *His email address is* **taylor@heartland.org**.

Oh, Those 'Enormous and Unreasonable' Oil Profits

Doug French

Hardly a week goes by without one of the local newspapers printing a letter from some reader ranting that the big oil companies are "price gouging" consumers. It never fails: Gasoline hits two bucks a gallon and here comes the outrage.

This time even Nevada's new attorney general, Brian Sandoval, is getting into the act. "Sandoval has sought written explanations from oil companies," states one report, "stepped up price monitoring and shared information with other attorneys general." There are your tax dollars at work: An attorney general wasting his—and businesses'—time, forcing people to explain why they are charging what they are charging for a product consumers are buying willingly.

Tim Hay, the attorney general's "consumer advocate," goes even further, calling for legislation prohibiting price gouging. *Las Vegas Sun* columnist Jeff German quoted "veteran petroleum consultant" Tim Hamilton as saying, "Because antitrust laws in Nevada and other states don't define gouging, the oil companies are allowed to artificially raise their prices as long as they do it independently and not as part of any organized plot." These threats of punishment are reminiscent of Russian commissars prosecuting "economic crimes" in the Soviet Union's communist heyday.

Gouging Soda Pop Prices?

Just what constitutes price gouging? How much profit is too much profit? And who decides? Politicians from coast to coast believe they should decide.

"It's an increase [in gasoline prices] directly attributable to profit-taking by the oil companies," proclaimed U.S. Senator Dick Durbin (D-Illinois). Simply earning a profit is now a crime? Back in 2000, Al Gore was beating the same tambourine: "We know that, according to the latest available statistics, oil company profits have increased by as much as nearly 500 percent in the first part of this year. These enormous and unreasonable profits suggest that big oil is gouging American consumers."

"ExxonMobil's return on equity for the last four years (1999 through 2002) was 12.4 percent, 25 percent, 21 percent, and 15 percent respectively. For the same four years Coca Cola's return on equity was 25.5 percent, 23.3 percent, 34.9 percent, and 25.8 percent."

Are big oil companies in fact earning "enormous and unreasonable" profits? ExxonMobil's return on equity for the last four years (1999 through 2002) was 12.4 percent, 25 percent, 21 percent, and 15 percent respectively. For the same four years Coca Cola's return on equity was 25.5 percent, 23.3 percent, 34.9 percent, and 25.8 percent. By that measure, perhaps it's the drinkers of soda pop who should be writing the letters to the editor.

Low Oil Profits

If "Big Oil" is earning "enormous and unreasonable" profits, the stock prices of the major oil companies should be going through the roof, right? ExxonMobil's stock price has fallen 12 percent over the past year. Royal Dutch Petroleum is down 20 percent, and Shell is down 12 percent. It looks like oil company stockholders, not consumers, are the ones getting hammered.

Could it be the local convenience store operators, rather than the oil companies, who are "gouging" customers? Industry experts say local operators average only 10 cents per gallon of profit. That's barely enough to keep the lights on and pay the guy or gal behind the counter. Convenience store operators make their profits from merchandise sales and gaming machines, not gasoline sales. The gas pumps are there just to get you into the store.

Gouging Taxes

So if gas prices are high, who *is* making out like a bandit? Turns out it's the same folks eager to investigate alleged "gouging": the political class.

The federal tax on gasoline is 18.4 cents per gallon. The State of Nevada levies an additional 33.7 cents. That's 52.1 cents a gallon going to the government. Residents of the Silver State pay the third highest gasoline tax in the nation, behind only New York and Hawaii.

But the politicians, both state and federal, want even more. "In Washington, DC, as well as in more than half the state capitals," reports CNNMoney.com, "there are proposals to increase the levies governments charge on gasoline, diesel, and other automotive fuels. If plans become law, they could add more than 25 cents a gallon in state and federal taxes, on top of the 40-to-50 cents a gallon most Americans already pay." Rep. Don Young (R-Alaska), chairman of the House Transportation and Infrastructure Committee, is seeking to increase the federal gasoline tax by roughly 80 percent, upping it to 33 cents by 2009.

The facts remain clear: It's Big Government that is taking in the "enormous and unreasonable" revenues from gasoline sales.

Doug French is executive vice president of a Southern Nevada bank and a policy fellow of the Nevada Policy Research Institute.

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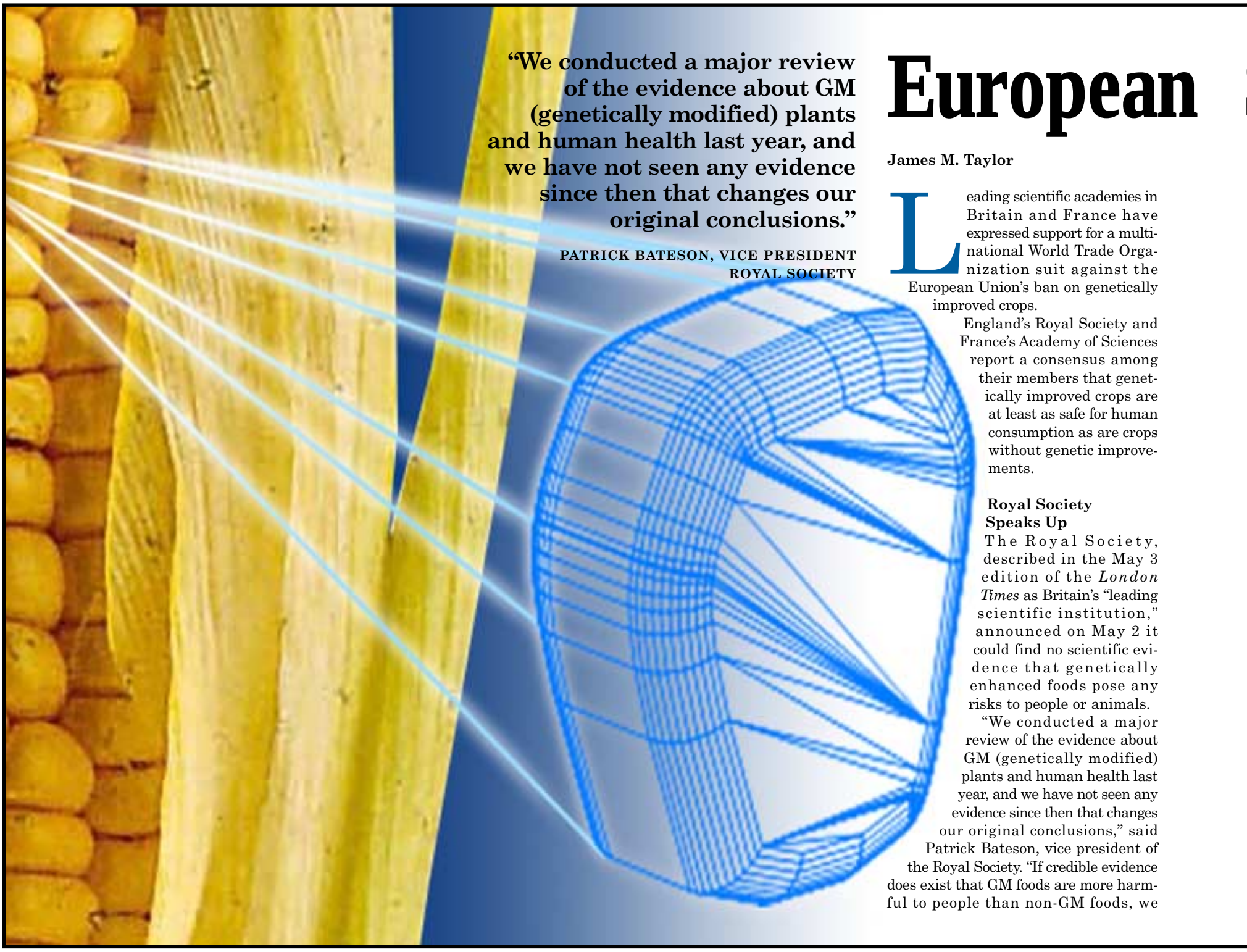

"We conducted a major review of the evidence about GM (genetically modified) plants and human health last year, and we have not seen any evidence since then that changes our original conclusions."

PATRICK BATESON, VICE PRESIDENT ROYAL SOCIETY

European

James M. Taylor

Leading scientific academies in Britain and France have expressed support for a multinational World Trade Organization suit against the European Union's ban on genetically improved crops.

England's Royal Society and France's Academy of Sciences report a consensus among their members that genetically improved crops are at least as safe for human consumption as are crops without genetic improvements.

Royal Society Speaks Up

The Royal Society, described in the May 3 edition of the *London Times* as Britain's "leading scientific institution," announced on May 2 it could find no scientific evidence that genetically enhanced foods pose any risks to people or animals.

"We conducted a major review of the evidence about GM (genetically modified) plants and human health last year, and we have not seen any evidence since then that changes our original conclusions," said Patrick Bateson, vice president of the Royal Society. "If credible evidence does exist that GM foods are more harmful to people than non-GM foods, we

Challenge

from page 1

The ban has been in effect since 1998, when the EU asserted it needed time to develop a regulatory system for the tracking and labeling of foods made from genetically improved crops. Five years later, the EU still enforces a moratorium on genetically enhanced crops, saying it is still in the process of devising a regulatory system.

Bush Cites Famine Concerns

Speaking at a May 21 commencement address at the Coast Guard Academy in New London, Connecticut, President George W. Bush cited the EU moratorium for exacerbating famine in Africa. "By widening the use of new high-yield bio-crops and unleashing the power of markets, we can dramatically increase agricultural productivity and feed more people across the continent," said Bush. "Yet our partners in Europe are impeding this effort. They have blocked all new bio-crops because of unfounded, unscientific fears.

"This has caused many African nations to avoid investing in biotechnologies, for fear their products will be shut out of European markets," Bush added. "European governments should join—not hinder—the great cause of ending hunger in Africa."

Said U.S. Trade Representative Robert B. Zoellick, "This dangerous effect of the EU's moratorium became evident last fall, when some famine-stricken African countries refused U.S. food aid because of fabricated fears—stoked by irresponsible rhetoric—about food safety.

"As a major importer of food, Europe's decisions ripple far beyond its borders. Uganda refused to plant a disease-resistant type of banana because of fears it would jeopardize exports to Europe," Zoellick said. "Namibia will not buy South Africa's biotech corn for cattle feed to avoid hurting its beef exports to Europe. India, China, and other countries in South America and Africa have expressed the same trepidation."

Congress Supports End to Ban

The moratorium is particularly harmful to U.S. farmers, who lose between $300 million and $500 million of exports to the EU each year according to most estimates. Accordingly, the filing of the WTO claim found broad support on Capitol Hill.

"It would be a shame if developing countries in Africa continue to deny food aid containing biotechnology because of the anti-biotechnology attitudes in Europe," said Representative Bob Goodlatte (R-Virgina), chairman of the House Agriculture Committee.

"The politicizing of agricultural biotechnology should end so that we can return to providing food aid to the hungry as soon as possible," Goodlatte said.

Republican Missouri Senator Jim Talent complained "the EU's position is simply a veiled attempt to protect its market from competition. Their policy decisions are based on unsound science and they are costing lives in countries coping with famine."

International Implications

Argentina, Australia, Canada, Chile, Columbia, Egypt, El Salvador, Honduras, Mexico, New Zealand, Peru, and Uruguay joined the U.S. in challenging the EU ban.

Two key questions will be addressed by the WTO. First, is a five-year moratorium on imports under the guise of regulatory rule-making the equivalent of a trade barrier? Second, is a ban on genetically enhanced food products supported by scientific evidence of health or environmental dangers?

"We have been working hard in Europe to complete our regulatory system in line with the latest scientific and international developments. The finalization period is imminent," promised David Bryne, EU Commissioner for Health and Consumer Protection.

Margot Wallstrom, EU Commissioner for the Environment, added the EU has no ban on genetically enhanced foods, but simply needs more time to develop and implement its desired regulatory standards.

"This U.S. move is unhelpful and can only make an already difficult debate in Europe more difficult," said Wallstrom. "But in the meantime, the Commission strongly believes that we in Europe should move ahead with completing our

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n Scientists Reject EU Biotech Ban

should like to know why it has not been made public.

"We have examined the results of published research, and have found nothing to indicate that GM foods are inherently unsafe," Bateson added. "If anybody does have convincing evidence, get it out in the open so that it can be evaluated."

The Royal Society's announcement came as tension was building over a World Trade Organization (WTO) suit to be filed against the European Union. The suit was filed less than two weeks later by more than a dozen countries, including the U.S., Canada, and Mexico.

Canada Derides EU Protectionism

"The EU would have us believe that its ban is motivated purely by environmental and consumer safety concerns," asserted a May 25 house editorial in Canada's *National Post*. "But not once has it cited any real evidence that proves GM foods are a danger to anyone's health. Indeed, the only verifiable difference between regular and GM crops is that, because the latter are grown from scientifically engineered seeds, they require fewer chemicals to remain pest-free. That means farmers need to spend less time spraying and are able to increase their crop yields.

"The real reason the EU is punishing our farmers, of course, has less to do with consumer safety than with trade protectionism," the *Post* continued. "Unless the EU produces real evidence that its moratorium is motivated by something other than protectionism, the WTO will have little choice but to rule in the complainants' favor."

EU Choosing Protectionism

"The EU, for political reasons, has steadfastly refused to follow the advice of their own scientific review committees that have always found that the genetically modified crops are safe and do not pose significant environmental risks," said Val Giddings, vice president for food and agriculture of the Biotechnology Industry Organization (BIO). "That is impermissible under the rules of the WTO."

"Giddings is right," reports Reason Foundation science correspondent Ronald Bailey. "Even EU scientific societies like the French Academy of Sciences say that the current criticisms against plant biotechnology are scientifically 'unfounded.'"

Giddings, however, warned that even a successful WTO claim would not necessarily end a de facto moratorium. The EU, in fact, is promising to end the moratorium on its own—once it finishes designing and implementing regulations to track and label foods resulting from genetically improved crops.

"Leaving the directives on traceability and labeling as they are would make lifting the moratorium moot. In fact, implementing the traceability and labeling directives is an even more effective way of killing trade in biotech food and crops than the moratorium itself," noted Giddings.

Reason's Bailey explained why: "The new plant biotechnology regulations are merely a moratorium by other means. The new EU regulations would require labeling of all foods containing 1 percent or more ingredients from GM foods. The new regulations would also require 'dirt to fork' traceability of foods incorporating ingredients made from GM crops.

"For example," Bailey continued, "a cookie made with corn syrup from pest-resistant maize would have to be labeled as containing GM ingredients, even though it contains no modified genes at all, just plain old sugars like glucose, dextrose, and maltose. Corn syrup may be bad for your waistline, but genetic engineering doesn't make it any worse or better. In the meantime, the entire supply chain would have to keep and maintain expensive records of exactly where each batch of glucose came from."

Other Nations Side with U.S.

Other nations, including many with little economic interest in the debate, have signed on with the U.S. claim. New Zealand, for example, does not produce genetically enhanced crops, but feels compelled to support the complaint.

"New Zealand has a strong interest in defending the integrity of the international trading system, in particular the sanitary and phytosanitary agreement which requires members to set health-related standards based on scientific evidence and risk analysis," said New Zealand Acting Trade Negotiations Minister Phil Goff.

"Our participation does not mean that we wish to promote New Zealand exports of GM crops. We do not produce GM grains or oilseeds and are not likely to. But the way to deal with consumer fears is to ensure they have proper information and that a sound regime is implemented for any restrictions on particular products," Goff said.

The co-leader of New Zealand's Green Party, Jeanette Fitzsimons, disagreed, claiming genetically enhanced crops are "inherently unpredictable, and GE foods have never been tested for safety.

"It is ironic that the prime minister lectured the European Policy Center just a few weeks ago on the benefits of 'fair' trade ... because there's nothing 'fair' in trying to use the dogma of international fair trade regulations to force GE food down the throats of people who don't want it," said Fitzsimons.

New Zealand Greenpeace spokesman Steve Abel chastised the WTO complaint and questioned the motives of its signatories. "To launch a WTO case to help the desperate genetic engineering industry to market its unwanted GE products is an insult to the European public," he said.

The Royal Society's Bateson defended European scientists. "The public have a right to decide whether they want to buy GM foods, and are entitled to have access to sensible and informed advice, based on sound science. It is disappointing to find a group like Greenpeace stating on its website that 'the risks are enormous and the consequences potentially catastrophic,' without offering any solid reasons to support such a claim."

James M. Taylor is managing editor of Environment & Climate News. *His email address is* **taylor@heartland.org**.

legislation on traceability and labelling on food and feed, currently before the European Parliament. We should not be deflected or distracted from pursuing the right policy for the EU."

"It's sad that leaders of southern African countries with starving populations have rejected U.S. food aid of biotech produce due to fears of losing export markets in Europe," countered Senator Chuck Grassley (R-Iowa), chairman of the Senate Finance Committee.

"As long as the European Union's moratorium stands, other countries might put their own populations at risk in an effort to comply with the European Union's misguided policies," he said.

"The European Union's refusal to license new biotech crops is a clear and blatant violation of its obligations under trade treaties it has signed and ratified," added Gregory Conko, director of food safety policy at the Competitive Enterprise Institute.

James M. Taylor is managing editor of Environment & Climate News. *His email address is* **taylor@heartland.org.**

4,000+ Scientists Sign Petition Supporting Biotech

James M. Taylor

More than 4,000 international scientists have signed an endorsement of genetically improved crops, a panel of scientists announced at a May 13 press conference. The event was called to announce that more than a dozen nations have brought a World Trade Organization claim against the European Union for banning genetically improved foods.

The ban "poses a genuine threat to the health and well-being of people throughout the developing world," said Gregory Conko, director of food safety policy at the Competitive Enterprise Institute. Conko spoke at a meeting of scientists and concerned citizens held after the press conference.

"[M]ore than a dozen nations have brought a World Trade Organization claim against the European Union for banning genetically improved foods."

Biotechnology allows farmers to use fewer pesticides on their crops and grow foods with less capital and labor investment, said T.J. Buthelezi, a farmer from South Africa who grows biotech cotton. He said at the meeting that biotechnology has allowed him to cut his pesticide applications from 10 sprays per hectare to two sprays. That not only benefits the environment, he said, but also frees up his time to produce more crops.

Ariel Alvarez-Morales, of Mexico's Center for Research and Advanced Studies, said at the meeting that the EU moratorium has reduced global investment in agricultural research because markets for new products remain uncertain. He asserted the EU was enforcing "excessive and unnecessary regulations based on fear" without scientific backing. "If we really want to use technology to reduce hunger, we don't need more regulations," he said.

According to Alvarez-Morales, the Center for Research and Advanced Studies is working with the private sector to develop virus-resistant potatoes and maize. Biotech advances will allow Mexican farmers to put into production five million hectares that are currently unsuitable for farming.

Biotechnology will also protect the Mexican environment, Alvarez-Morales said. With more productive farms, Mexican farmers will be able to meet their country's food needs without having to transform forests to farmland in order to feed a growing population.

James M. Taylor is managing editor of Environment & Climate News. *His email address is* **taylor@heartland.org**.

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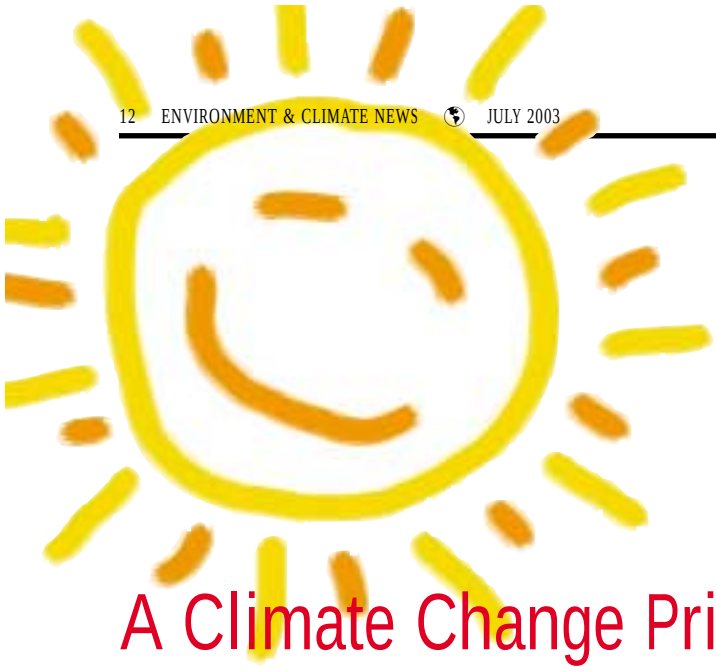

Part three in a three-part series

In Part One of this three-part series, Lehr and Bennett defined and described the "greenhouse effect," summarized temperature observations and reported that average global temperature has increased roughly 0.6° C over the past 120 years, and described the methods used to measure temperature. In Part Two, they explained how the Earth's movement around the sun causes climate to change.

In this third and final part, Lehr and Bennett describe the shortcomings of computer models and emphasize the need for continued climate research.

A Climate Change Primer:

Computer Models & the Need For More Research

Jay Lehr and Richard S. Bennett

Computer simulations of the Earth's climate are not accurate, as they do not take into account all of the variables that affect climate.

We know from simple physics, for example, that the doubling of atmospheric carbon dioxide (CO2) adds about 4 watts per square meter (W/m2) of energy to the climate system. CO2, of course, is the "greenhouse gas" targeted by global warming adherents as the principal cause of man-made climate change.

But the 4 W/m2 of energy that a doubling of atmospheric CO2 contributes is dwarfed by the amount of energy supplied by the sun's radiation: 342 W/m2 in the upper levels of the atmosphere.

And 4 W/m2 is also small compared to the uncertainties in the climate change calculations.

For example, our knowledge of the amount of energy flowing from the equator to the poles is uncertain by an amount equivalent to 25-30 W/m2. The amount of sunlight absorbed by the atmosphere or reflected by the surface is also uncertain by as much as 25 W/m2. Some computer models include adjustments to the energy flows of as much as 100 W/m2. Imprecise treatment of clouds may introduce another 25 W/m2 of uncertainty into the basic computations. (1)

These uncertainties in modeling climate processes are many times larger than the 4 W/m2 input of energy resulting from a doubling of CO2 concentration in the atmosphere. It is difficult to see how the climate impact of the 4 W/m2 can be accurately calculated in the face of such huge uncertainties. As a consequence, forecasts based on computer simulations of climate may not even be meaningful at this time.

A comparison of nearly all of the most sophisticated climate models with actual measurements of current climate conditions found the models in error by about 100 percent in cloud cover, 50 percent in precipitation, and 30 percent in temperature change. Even the best models give temperature change results differing from each other by a factor of two or more. (2)

2001 NAS Findings Overstated

Considerable confusion has been added to the debate by the National Academy of Sciences (NAS) *Report on Global Climate Change*, issued in June 2001. (3) The report, which the news media trumpeted as having confirmed global warming, in fact resolved very little. What it reported as fact—that global temperatures as measured by land-based thermometers have risen in the past 20 years—was already known and not a point of contention.

What the NAS report did not conclude was that global warming was the result of human activity. In a passage not reported by the press, the report actually concluded: "A causal linkage between the buildup of greenhouse gases in the atmosphere and the observed climate changes during the 20th century cannot be unequivocally established."

The NAS report also pointed out that current warming could be completely natural. The scientist-authors state that due to inadequacies in the global warming computer simulation models, they cannot tell for sure whether this warming is anything more than natural climate variation: "The fact that the magnitude of observed warming is large compared to natural variability as simulated in climate models does not constitute proof of a linkage [to increases in greenhouse gases] because the model simulations could be deficient."

The report also noted that land-based measurements of global temperatures over the past 20 years are inconsistent with satellite readings, which have shown only a 0.04° C temperature increase per decade. The report noted, "satellite measurements beginning in 1979 show little warming of air temperature in the troposphere." This is significant because the global warming hypothesis predicts satellite measurements of temperatures in the troposphere will show warming before it is evident at the surface.

"[U]ncertainties in modeling climate processes are many times larger than the 4 W/m2 input of energy resulting from a doubling of CO2 concentration in the atmosphere."

The NAS authors noted they have no explanation for this contradiction, stating, "the finding that surface and troposphere temperature trends have been as different as observed over intervals as long as a decade or two is difficult to reconcile with our current understanding of the processes that control the vertical distribution of temperature in the atmosphere."

The evidence appears to directly contradict the global warming hypothesis, suggesting that observed surface warming is not part of a pattern of human-induced global warming. Of the three measurements of global temperatures—satellite, land-based, and weather balloon—only the land-based data show any significant warming.

The Case for Research

The predictions of severe warming over the coming century are based on developing models of climate that have so far failed to accurately simulate history, let alone predict the future. The satellite record of lower atmosphere temperatures since 1979 shows nearly no warming in the lowest level of the atmosphere, where models predicted the fastest warming. The models also utterly fail to accurately simulate the transition into and out of the Ice Ages for the past few hundred thousand years.

We should continue to invest in climate science, to unlock the mysteries of what really makes climate tick. There are many benefits to understanding and predicting our weather.

We should also plan for changes in climate, as climate naturally changes. We need to invest in agricultural adaptability and in water management. But we should also recognize that many scientific studies conclude high CO2 concentrations are *better* for agriculture.

Even under the worst-case global warming scenario, delaying for 25 years any substantial cuts in CO2 emissions would produce an additional global temperature rise of no more than a few tenths of a degree C by the year 2100. (4) That means we have at least 25 years in which to sharpen our understanding of climate and seek valid predictions, without contributing to serious climate change.

Policies developed in haste, or based on poor information, are likely to have a destructive impact on the U.S. and world economies and the well-being of all Earth's citizens. By contrast, an incremental warming of a few tenths of a degree, spread over decades, constitutes no hazard while we seek important, additional information on which to build national and worldwide energy policy.

Jay Lehr is science director for The Heartland Institute. Richard Bennett is president of The Society of Environmental Truth in Corpus Christi, Texas.

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Warming Insignificant

from page 1

on less-comprehensive data, that suggest climate was relatively stable until a sharp warming in the late twentieth century.

The new study, *Reconstructing Climatic and Environmental Changes of the Past 1000 Years: A Reappraisal*, does not draw conclusions on potential twenty-first century human impact on climate. However, it presents strong evidence that natural causes have forced significant global changes in climate over the past 1,000 years and that twentieth century climate was not unusual.

That knowledge makes it more difficult to interpret the origins of recent surface warming, and it adds significant uncertainty to computer predictions of man's future potential impact on climate.

Study Background

Several scientists, in conjunction with the Harvard-Smithsonian Center for Astrophysics, conducted the study, which was sponsored by NASA, the U.S. Air Force, National Oceanic and Atmospheric Administration, and American Petroleum Institute. The report was published in Volume 14, Nos. 2 and 3 (2003) of *Energy & Environment.*

The study examined more than 240 earlier studies of proxy climate data from locations around the world, reflecting climatic conditions over the past 1,000 years. The proxy data came from documentary and cultural sources, ice cores, glaciers, boreholes, speleotherms, tree-ring growth, peat cellulose, pollen, phenological data, and seafloor sediments.

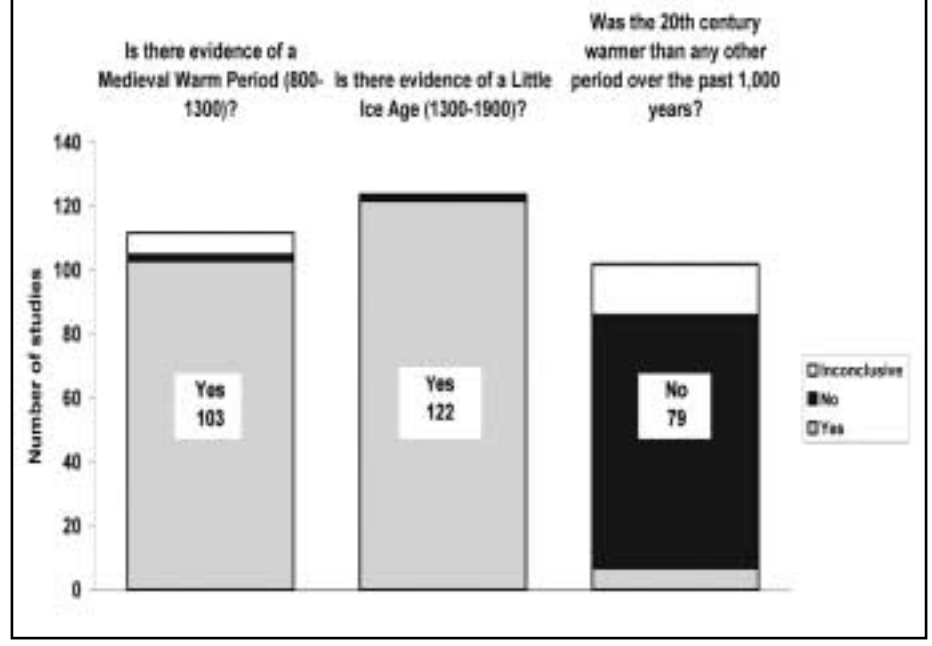
Based on these data, the study tallied significant climate "anomalies" of greater cold, warmth, wetness, and dryness sustained for at least 50 years within the thousand-year period.

Study Results

The study provides strong evidence for the existence of a Medieval Warm Period from before 1000 A.D. to about 1300 A.D. and a Little Ice Age from about 1300 A.D. to about 1900 A.D., both extending broadly across the world. Even within these periods the climate varied substantially.

Temperatures rose in the twentieth century, but the warming was not remarkable compared with the Medieval Warm Period and past climate variability. "Overall," the study concludes, "the 20th century does not contain the warmest or most extreme [climate] anomaly of the past millennium in most of the proxy records."

Studies Showing Proof of Warming



The accompanying figure sorts the findings of the proxy studies to evaluate climate during the Medieval Warm Period, Little Ice Age, and twentieth century.

Study Implications

The Harvard-Smithsonian study adds to other research challenging a much more limited study, relied upon heavily by the United Nations' Intergovernmental Panel on Climate Change, which suggests temperatures over the past 1,000 years have been relatively stable and that warming in the late twentieth century is unusual. The earlier, limited study relied on a mathematical model of tree ring data from locations primarily in the Northern Hemisphere and showed no evidence of the Little Ice Age or Medieval Warm Period.

The Harvard-Smithsonian analysis suggests natural climate variability can be substantial, making it more difficult to separate natural climate variability from potential human impact on climate. The findings confirm the U.S. National Research Council's conclusion, "The evidence of natural variations in the climate system—which was once assumed to be relatively stable—clearly reveals that climate has changed, is changing, and will continue to do so with or without anthropogenic influences."

The Harvard-Smithsonian findings also support increased research on natural climate variability and argue for climate policies that reflect our incomplete understanding of what makes climate change.

Willie Soon is a physicist at the Solar and Stellar Physics Division of the Harvard-Smithsonian Center for Astrophysics and an astronomer at the Mount Wilson Observatory. He is also a senior scientist at the George C. Marshall Institute and science director for TechCentral Station. Sallie Baliunas is an astrophysicist at the Harvard-Smithsonian Center for Astrophysics. She serves as deputy director of Mount Wilson Observatory and as Senior Scientist at the George C. Marshall Institute in Washington, DC.

"Several scientists, in conjunction with the Harvard-Smithsonian Center for Astrophysics, conducted the study, which ... examined more than 240 earlier studies of proxy climate data from locations around the world, reflecting climatic conditions over the past 1,000 years."

MORE INFORMATION

The full text of the 67-page study, *Reconstructing Climatic and Environmental Changes of the Past 1000 Years: A Reappraisal*, is available through *PolicyBot*. Point your Web browser to **http://www.heartland.org**, click on the *PolicyBot* icon, and search for document #**12312**.

NCAR Report Based on Flawed Science

S. Fred Singer

A news release from the National Center for Atmospheric Research (NCAR) claims a "New Look at Satellite Data Supports Global Warming Trend." But the NCAR result is based on the wishful thinking of well-known global warming promoters, rather than on solid science.

The NCAR findings were published by the journal *Science* on May 1 at **http://www.sciencexpress.org**. The lead author is Benjamin Santer of Lawrence Livermore National Laboratory. Santer became notorious for surreptitiously altering the text of a crucial chapter in the 1995 United Nations' Intergovernmental Panel on Climate Change (IPCC) *Report on Climate Change* in order to make it conform to the politically inspired IPCC *Summary for Policymakers*.

Competing Trends

The NCAR study is based on an analysis of weather satellite data by Frank Wentz and his colleagues at Remote Sensing Systems (RSS). They proclaim a warming trend of about 0.1˚ C per decade between 1979 and 1999. Those results are at odds with previous analyses of the same satellite data by John Christy and Roy Spencer of the University of Alabama at Huntsville (UAH), who found virtually no warming over the 20-year period.

Over the past 25 years, a series of instruments aboard 12 U.S. satellites has provided a unique temperature record extending as high as the lower stratosphere. Each sensor intercepts microwaves emitted by various parts of the atmosphere, with the emissions increasing as temperatures rise. These data are used to infer the temperature at key atmospheric layers.

The absence of an observed warming signal in satellite-derived atmospheric temperatures has stood in contrast to a distinct warming trend in temperature readings at the Earth's surface. A 2000 report from the National Research Council concluded both trends might be correct—the global atmosphere might be warming more quickly near the ground than higher up. All theoretical climate models, however, predict a higher rate of warming for the atmosphere than for the surface.

The RSS group found a warming trend of 0.16˚ F per decade in the layer between about 1.5 and 7.5 miles high, compared to a trend of 0.02˚ F in the previously published UAH analysis. Both estimates have a margin of error of nearly 0.2˚ F (plus or minus). The RSS results would be a closer match with surface warming, as well as with computer-model simulations, and are therefore preferred by the NCAR group.

New Study Flaws

But the RSS results are most likely not correct.

Wentz presented the RSS analysis of the satellite data on December 4 in Washington, DC at a panel organized by the federal Climate Change Science Program. Christy, Santer, and I were members of the panel and heard his presentation, but there was no time for discussion of his startling results.

Wentz was kind enough to give me a copy of his full paper so I could study it. It is a careful piece of work that must be taken seriously, but that does not make it correct. I mailed him a number of comments, to which his coauthor, Carl Mears, responded. I then suggested they perform some crucial tests on the internal consistency of their results. There has been no reply so far. I also received comments from Christy discussing the weak points in the RSS work.

Independent atmosphere temperature

See NCAR p. 14

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Asian Brown Cloud Contradicts, Confounds Global Warming Theories

James M. Taylor

Indian scientist Veerabhadran Ramanathan won global acclaim in 1999 when he discovered one of the largest, most deadly bodies of pollution ever observed. What Ramanathan did not realize at the time was that his service to science and humanity would make him one of the most controversial figures on the planet.

A large cloud of soot, produced mainly by impoverished Asians burning dung for energy, is blanketing the region, and indeed the globe. Ramanathan's discovery of the "Asian Brown Cloud," as it came to be known, offered scientists an opportunity to study and perhaps eliminate one of Earth's most deadly masses of pollution.

However, study of the cloud indicated it was doing more than filling human respiratory systems with high levels of gritty soot, mercury, and other pollutants ... it was perhaps the single greatest cause of global warming on the planet.

The cloud's polluting effects, in the conventional sense of the word, are beyond dispute. In August 2002 the United Nations warned the cloud may cause "several hundreds of thousands of premature deaths" from disease and drought.

Hans Friedli, a scientist at the U.S. National Center for Atmospheric Research, described flying into the cloud as "the highest concentration [of pollutants] that I have seen from an aircraft except when you fly into wildfires."

Veerabhadran Ramanathan won global acclaim in 1999 when he discovered one of the largest, most deadly bodies of pollution ever observed.

Link to Warming

But scientists during the past year have linked the cloud to another, unexpected environmental issue: global warming.

"Asian pollution, because it contains the residue from hundreds of millions of dung-fueled cooking fires and inefficient coal furnaces, carries an unusually large burden of soot," reports the *Wall Street Journal*'s John Fialka. That soot, because it is darker than the bright emissions of Western industry, traps heat and sunlight much more effectively than Western emissions, which reflect heat and sunlight back into space.

Dr. Surabit Menon, an atmospheric scientist at Columbia University, ran a computer program using Chinese weather reports to measure the warming effects of the brown cloud. He found the brown cloud contributes more to global warming than Western industrial emissions.

"[S]tudy of the cloud indicated it was doing more than filling human respiratory systems with high levels of gritty soot, mercury, and other pollutants ... it was perhaps the single greatest cause of global warming on the planet."

U.S. assistant secretary of commerce James Mahoney agreed with Menon's findings. According to Mahoney, the Asian brown cloud may cause as much planetary warming as all other global sources combined.

"It is ironic that much of the pollution could be avoided by the use of cleaner fossil fuels, like gas, oil, and even coal, all of which release CO2," said S. Fred Singer, professor emeritus of environmental sciences at the University of Virginia.

Politics Take Over

As news broke of the connection between the Asian Brown Cloud and global warming, Ramanathan received warnings about what it could mean to his ongoing study of the cloud. "My colleagues told me when I got into this that global warming is not really pure science—politics is mixed in with it," Ramanathan reported.

Ramanathan's colleagues were right. Indian officials, worried their country would be stigmatized for the cloud and forced to switch to more expensive fuel sources, called the global warming findings "a scientific fraud." Rather than press for more funding to study the effects of the brown cloud, Asian officials successfully lobbied the United Nations to slash funding for brown cloud research.

According to Fialka, "The dispute could slow scientific studies about how the Earth's climate is changed by pollution. Such inquiries increasingly depend on international cooperation because the causes and effects of climate change transcend national boundaries."

Future Implications

Discovery of the strong connection between the brown cloud and global warming vindicates the U.S. government's insistence that more scientific study is necessary before extreme policy prescriptions, such as those contained in the Kyoto Protocol, are adopted. Kyoto would impose severe cuts on alleged greenhouse gas sources in Western industrial nations, but would exempt nations such as China and India. Even before the discovery of the connection between the brown cloud and global warming, China and India were ranked as the 2nd and 3rd largest emitters of greenhouse gases.

Responding to the new scientific evidence and the subsequent U.N. funding cuts, the U.S. is pressing other industrial nations to fund more satellites that can study the global effects of the cloud. The funding issue will likely be decided at the December 2003 Milan climate change conference.

In the meantime, the U.N. has responded to complaints by Asian nations that they are being stigmatized by the cloud by officially changing its name from the "Asian Brown Cloud" to the "Atmospheric Brown Cloud."

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NCAR

from page 13

data from radiosonde instruments carried aloft in weather balloons do not support RSS but agree with the UAH result of a negligible warming trend (which will become even smaller as the 1998 El Niño warming is gradually washed out). Of course, the balloon data have problems of their own that require correction.

But the surface data at weather stations are subject to large corrections as well. A most important one—and difficult to remove completely—is the well-known "urban heat island" effect. (See "Study Documents False Warming Trend," *Environment & Climate News*, June 2003.) The urban heat island effect is the local heating produced over time by the expansion of housing, traffic, and energy consumption in the vicinity of city-based weather stations.

Finally, we have a large amount of non-instrument data from "proxies" for thermometers. Such proxies include measurements of the widths of tree rings, isotope data from ocean and lake sediments, ice cores and corals, etc. All of these can be calibrated in terms of temperature. I have personally examined many of these published results and have yet to find any that show a recent warming. It is another strong piece of evidence in support of the conclusion that the surface data from city-based weather stations are contaminated by local heating effects and cannot be relied on to support global warming.

If, as suspected, the RSS analysis is not correct, then the NCAR study is mostly hot air. As science journalist Ron Bailey points out: "Evidently, the strategy being used by Santer et al. is that if their models don't agree with the data, then change the data."

S. Fred Singer is professor emeritus of environmental sciences at the University of Virginia and president of the non-profit Science & Environmental Policy Project in Arlington Virginia. **http://www.sepp.org**

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OPEN LETTER

Senate Should Oppose Energy Rationing

TO:
The Honorable Mr. Henry Hyde
Chairman
Committee on International Relations
U.S. House of Representatives
Washington, DC 20515

MAY 5, 2003

Dear Chairman Hyde:

The undersigned nonprofit organizations write to share our concerns with the sense of the Congress language on climate change adopted by the Senate Foreign Relations Committee on April 9 as part of State Department authorization legislation.

We think the scientific findings are tendentious, misleading, and in one instance based on a discredited source. We think that the resolutions are ill-advised and would put the United States back on the calamitous course of pursuing centrally planned energy consumption and negotiating destructive but pointless international agreements.

In our view, the first finding would be more accurate if it read, "*Newspaper headlines claim that* evidence continues to build that increases in atmospheric concentrations of manmade greenhouse gases are contributing to global climate change." The fact is that all kinds of evidence continue to build, including considerable evidence that human effects on global climate are small.

The second finding quotes the brief *Summary for Policymakers* of the Intergovernmental Panel on Climate Change's massive *Third Assessment Report*. The summary was produced by governments assisted by United Nations scientific officials in order to support the Kyoto agenda. We do not believe a reading of the full *Third Assessment Report*, which was produced by scientists, supports the summary's claim.

As for the "expectation" that average global temperatures will rise 2.5 to 10.4 degrees Fahrenheit in the next century, the IPCC has been careful to explain these are not predictions but rather are based on possible scenarios. Many analysts have concluded the more extreme scenarios are practically impossible.

The third finding quotes a National Research Council panel endorsing the IPCC's conclusions and then quotes the same panel as to "considerable uncertainty" about these conclusions. The full NRC report contains many similar expressions of uncertainty, and several other recent NRC reports on climate identify even more uncertainties.

The fourth finding pointlessly observes the IPCC has stated sea levels have risen, etc. Not mentioned is the fact the IPCC correctly does not attribute sea level rise to rising greenhouse gas emissions. Sea levels have been rising since the last Ice Age, and most scientists believe they will continue to rise until the next Ice Age.

The fifth scientific finding relies on the National Assessment on climate change, which has been thoroughly discredited in the scientific community and was disavowed by the Bush administration. It is not, as the finding claims, "a United States Government report." The computer models used to forecast possible impacts of climate change are not capable of making reliable regional forecasts, according to one of the modeling teams employed.

In our view, the resolutions are even more flawed than the findings. The first two resolutions recommend the U.S. adopt Kyoto-style policies to limit energy use by American consumers. The third resolution urges the U.S. to extend the Kyoto Protocol by negotiating a second round of binding limits on greenhouse gas emissions. As many leading global warming alarmists have discovered, the Kyoto Protocol is a dead end (or, in the polite language of diplomacy, a *cul-de-sac*) and so too are all similar approaches based on forcing cuts in carbon dioxide emissions.

Adopting Kyoto-style policies would have enormous economic costs without making significant reductions in greenhouse gas levels. Just at the moment the Kyoto Protocol is collapsing and other industrialized countries that have ratified the Protocol are discovering they cannot meet their targets is not the time to jump back on the Kyoto bandwagon.

For these reasons, we think the Congress should not adopt any resolutions on climate policy without much more careful consideration and a much fuller debate. In the (as we believe) unlikely event that man-made climate change poses potential problems in the future, we think the only reasonable way to prepare to deal with these problems is by adopting policies that will foster long-term technological transformation and increase our capability to respond to challenges.

Thank you for your attention to our thoughts and concerns.

Fred Smith, President
and **Myron Ebell**, Director,
Global Warming Policy
Competitive Enterprise Institute

Paul M. Weyrich, National Chairman
Coalitions for America

Grover Norquist, President
Americans for Tax Reform

Paul Beckner, President
Citizens for a Sound Economy

David Keene, Chairman
American Conservative Union

Malcolm Wallop, Chairman
Frontiers of Freedom

Duane Parde, Executive Director
American Legislative Exchange Council

James L. Martin, President
60 Plus Association

Tom Schatz, President
Citizens Against Government Waste

John Berthoud, President
National Taxpayers Union

Amy Ridenour, President
National Center for Public Policy Research

Frank J. Gaffney Jr., President
Center for Security Policy

Karen Kerrigan, Chairman
Small Business Survival Committee

Tom DeWeese, President
American Policy Center

Joseph L. Bast, President
The Heartland Institute

Paul Driessen, Senior Fellow
Committee for a Constructive Tomorrow

Steven Milloy, President
Citizens for the Integrity of Science

Lori Waters, Executive Director
Eagle Forum

Richard Lessner, Executive Director
American Renewal

Terrence Scanlon, President
Capital Research Center

Dennis T. Avery, Director
Center for Global Food Issues, Hudson Institute

Leroy Watson, Legislative Director
The National Grange

Kevin L. Kearns, President
U.S. Business and Industry Council

Bonner Cohen, Senior Fellow
Lexington Institute

Michael Hardiman, Legislative Director
American Land Rights Association

C. Preston Noell III, President
Tradition, Family, Property, Inc.

Ron Pearson, President
Council for America

Jeffrey B. Gayner, Chairman
Americans for Sovereignty

Chuck Muth, President
Citizen Outreach

Benjamin C. Works, Executive Director
SIRIUS

Allan Parker, Founder and CEO
Texas Justice Foundation

Alan Caruba, Founder
The National Anxiety Center

Mark Q. Rhoads, Acting President
U. S. Internet Council

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EPA's Particulate Matter Standard Challenged

S. Fred Singer

A recent study by Competitive Enterprise Institute Adjunct Scholar Joel Schwartz challenges the scientific basis of the Bush administration's Clear Skies Initiative and Senator Jim Jeffords' (I-Vermont) Clean Power Act.

The analysis, released April 21, has implications for climate policy. Jeffords' legislation includes regulation of carbon dioxide emissions, and Bush's plan could serve as a proxy climate policy by forcing utilities to close coal-fired power plants in order to achieve mandated limits on mercury emissions.

Clear Skies and Clean Power would impose tough new controls on power plants to reduce levels of fine particle (PM2.5) pollution, alleged to kill tens of thousands of people every year. Supporters of these bills promise substantial benefits from additional PM reductions. [2.5 refers to particle size of 2.5 microns or smaller.]

Weak Science Foundation

Schwartz's new study concludes Clear Skies and Clean Power rest on a weak scientific foundation. The U.S. Environmental Protection Agency (EPA) based its PM2.5 standard on an American Cancer Society (ACS) study of PM and mortality, which evaluated the association between PM2.5 levels in dozens of American cities and the risk of death between 1982 and 1998.

Although the ACS study reported an association between PM and mortality, some odd features of the results suggest PM is not the culprit. For example, higher PM levels increased mortality in men, but not women; in those with no more than a high school degree, but not those with at least some college; in former smokers, but not those who currently smoke or never did; and in those who said they were moderately active, but not those who said they were very active or sedentary.

Such variations in the relationship between PM2.5 and mortality seem biologically implausible. Moreover, the ACS study reported that higher PM2.5 levels were not associated with an increased risk of mortality due to respiratory disease—a surprising finding, given that particulate matter would be expected to exert its effects through the respiratory system.

In setting its new PM2.5 standard, EPA ignored the results of another epidemiological study that found no effect of PM2.5 on mortality in a cohort of veterans with high blood pressure, even though this relatively unhealthy cohort should have been more susceptible to the effects of pollution than the general population.

The evidence suggests EPA's standard for PM2.5 is unnecessarily stringent. Attaining the standard will be expensive but is unlikely to improve public health.

"The evidence suggests EPA's annual standard for PM2.5 is unnecessarily stringent. Attaining the standard will be expensive but is unlikely to improve public health."

Air pollution has declined dramatically over the past 30 years, and it will continue to decline. More recent vehicle models start out cleaner than earlier ones and stay cleaner as they age, and already-adopted standards for new vehicles and existing power plants will come into effect in the next few years.

If policymakers feel they must do something to speed up PM reductions, Schwartz advises they offer people tax incentives to scrap high-polluting older vehicles that account for a substantial portion of ambient PM levels in metropolitan areas. This flexible, cost-effective approach is more likely to result in net public health benefits than either Clear Skies or Clean Power.

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MORE INFORMATION

Joel Schwartz's 45-page study for the Competitive Enterprise Institute, "Particulate Air Pollution: Weighing the Risks," is available through *PolicyBot*. Point your Web browser to **http://www.heartland.org**, click on the *PolicyBot* icon, and search for document **#12327**.

Animal Tests Overstate Cancer Fears

Cancer scares created by environmental activist groups frequently focus on man-made chemicals. However, such chemicals play a very small role in human cancer rates and are far outweighed by the risks posed by natural chemicals, according to *Misconceptions about the Causes of Cancer*, a book published by the Fraser Institute and authored by leading cancer researchers Lois Swirsky Gold, Thomas H. Slone, Neela B. Manley, and Bruce N. Ames.

In the following excerpts from the book, the authors explain why animal cancer tests tend to overstate human cancer fears, especially with respect to man-made chemicals.

High Test Rates

"Approximately half of all chemicals that have been tested in standard animal cancer tests, whether natural or synthetic, are rodent carcinogens. Why do so many test positive? A reasonable explanation is that the design of these experiments produces effects that would not occur at lower doses. In standard cancer tests, rodents are given chronic, near-toxic doses. Evidence is accumulating that cell division caused by the high dose itself, rather than the chemical per se, is increasing the carcinogenic effects and, therefore, the positivity rate." (page 31)

"At the low levels to which humans are usually exposed, such increased cell division does not occur. Therefore, the very low levels of chemicals to which humans are exposed through water pollution or synthetic pesticide residues may pose no, or only minimal, cancer risks because these effects do not occur at low doses." (page 32)

"Historically, standard practice in regulatory risk assessment for chemicals that induce tumors in high-dose rodent bioassays has been to extrapolate risk to low dose in humans by multiplying rodent potency by human exposure, i.e. by assuming linearity in the dose response. However, the true human risk of cancer at low dose is highly uncertain and could be zero. Several mechanisms have now been identified that indicate that carcinogenic effects at the high doses of rodent tests would not be relevant to the low doses of most human exposures." (page 34)

Rodents as Indicators

"Since the results of high-dose rodent tests are routinely used to identify a chemical as a possible cancer hazard to humans, it is important that we try to understand how representative the 50% positivity rate might be of all untested chemicals. If half of all chemicals (both natural and synthetic) to which humans are exposed would be positive if tested, then the utility of a rodent bioassay to identify a chemical as a 'potential human carcinogen' is questionable. To determine the true proportion of rodent carcinogens among chemicals would require a comparison of a random group of synthetic chemicals to a random group of natural chemicals. Such an analysis has not been done." (page 36)

"The use of bioassay results in risk assessment requires a qualitative species extrapolation from rats or mice to humans. The accuracy of this extrapolation is generally unverifiable, since data on humans are limited. Ultimately one wants to know whether the large number (many hundreds) of chemicals that have been shown to be carcinogenic in experimental animals would also be carcinogenic in humans." (page 38)

"Evidence about interspecies extrapolation can be obtained by investigating whether chemicals that are carcinogenic in rats are also carcinogenic in mice, and vise versa. If mice and rats are similar with respect to carcinogenesis, this provides some evidence in favor of interspecies extrapolations; conversely, if mice and rats are different, this casts doubt on the validity of extrapolations from mice to humans." (page 39)

"One measure of interspecies agreement is concordance, the percentage of chemicals that are classified the same way as to carcinogenicity in mice and rats (i.e. results are concordant if a chemical is a carcinogen in either both species or neither, and results are discordant if a chemical is a carcinogen in one species but not in the other). Observed concordance in bioassays is about 75%, which may seem low since the experimental conditions are identical and the species are similar." (page 39)

MORE INFORMATION

The full text of *Misconceptions About the Causes of Cancer* is available in Adobe Acrobat's PDF format on the Fraser Institute's Web site at **http://www.fraserinstitute.ca/shared/readmore.asp?sNav=pb&id=477**. The book can also be ordered from the Fraser Institute for $19.95 (CAN) plus $10.00 shipping and handling. Call 604/688-0221 or email your order to **sales@fraserinstitute.ca**.

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California Supreme Court Expands Coastal Commission Challenge

Ronald A. Zumbrun

In an increasingly unusual legal scenario, the California Supreme Court agreed on April 9 to review rulings issued by the Sacramento Superior Court and the Court of Appeal for the Third Appellate District, both of which had determined the California Coastal Commission is unconstitutionally structured. The state supreme court has, however, greatly expanded the issues under consideration.

The underlying lawsuit was brought by the nonprofit Marine Forests Society of Newport Beach, California and its president, Rodolphe Streichenberger. The Society is dedicated to the creation of marine forests to replace lost marine habitats by "planting the sea" with seaweed and shellfish. The Society challenged the Coastal Commission's authority to require the elimination of its successful environmental research offshore from Newport Beach.

Commission's Multiple Powers

On May 8, 2001, Sacramento Superior Court Judge Charles C. Kobayashi held the Coastal Commission to be in violation of the separation of powers clause of the California Constitution. Kobayashi based his ruling on the fact that the state legislature appoints eight of the 12 voting members of the executive branch Commission; those eight serve solely at the will of the legislature and do not answer to anyone in the executive branch.

"Questions remain which could raise due process, takings, equal protection, or privileges and immunities issues under the federal Constitution and the Federal Civil Rights Act."

Because of this structure, Kobayashi held the Commission to be effectively a legislative body limited to setting policy consistent with the Coastal Act. Thus, the Commission could not perform executive and judicial branch functions such as issuing, denying, or conditioning permits, issuing cease-and-desist orders, and performing other regulatory functions.

The separation of powers concept is deeply rooted in our nation's history and provides that the powers of government are legislative, executive, and judicial. "Persons charged with the exercise of one power may not exercise either of the others except as permitted by this Constitution."

Reforms Insufficient

On December 30, 2002, in a unanimous ruling authored by Presiding Justice Arthur G. Scotland, the Court of Appeal upheld Kobayashi's ruling that the Commission was unconstitutionally structured.

Governor Gray Davis called a special legislative session to correct the constitutional deficiencies in the Commission's structure. The resulting Assembly Bill 1X was passed by the legislature and signed by the governor on February 20, 2003.

But AB 1X changed only the nature and duration of the legislative appointees' terms—they now will have fixed four-year terms instead of two-year at-will terms. No change was made to address the fact that the legislature appoints two-thirds of the voting commissioners and that the Commission does not answer to anyone in the executive branch.

Supreme Court Issues

In unanimously granting review of the matter, the California Supreme Court requested the parties to brief several issues. (1) Assuming the Commission's decision in the present case is constitutionally defective in the manner stated by the Court of Appeal, what is the appropriate remedy available to Marine Forests Society? (2) What effect would the holding of the Court of Appeal have on past and other currently pending decisions of the California Coastal Commission? (3) Does the February 20, 2003 legislative amendment eliminate the separation-of-powers defect found by the Court of Appeal, or is the composition of the Coastal Commission still vulnerable to a separation-of-powers challenge?

These briefing requests are highly unusual, apparently intended to put to rest all issues raised by the series of events described above and the resulting confusion. For example, the law upon which the Court of Appeal ruled is no longer law. The new law has not been reviewed by any court and continues to present serious separation of powers issues. At the same time, the Court of Appeal has held the actions of the Coastal Commission under the old law to be jurisdictionally invalid.

The issues of retroactivity and the constitutionality of the corrective legislation were not before the courts in the earlier proceedings in this case. That the state supreme court chose to add them greatly expands the stakes and exposure of the Commission.

Void from the Beginning?

Law schools teach that action taken without jurisdiction is *void ab initio*, meaning "void from the beginning." If this basic concept is applied to the Commission, it could mean all actions taken by the Commission since it was formed in 1976 should be declared void or invalid.

However, another legal concept is *de facto jurisdiction*, initially intended to protect the public when it is later learned a government agency or officer thereof lacked jurisdiction to act. If a member of the public believed there was jurisdiction and the agency or official thought there was jurisdiction, then jurisdiction will be deemed so long as the government act was otherwise lawful. This concept should protect all members of the public having received permits from the Commission in the past.

A question to be addressed by the state supreme court will be whether *de facto* jurisdiction is available to the Commission concerning permit requests rejected in the past. Used in this manner, the concept has been losing favor in the federal courts. However, the California Supreme Court as a matter of policy may want to avoid the chaos of invalidating 27 years of coastal permit deals.

Further complicating matters, many of the Coastal Commission's negative actions over the years were invalid on constitutional grounds other than the separation of powers. In its first 12 years the Commission routinely required property owners to dedicate substantial portions of their property to the state as a condition of receiving permits. That practice was invalidated in 1987 by the United States Supreme Court as "an out-and-out plan of extortion" in *Nollan v. California Coastal Commission (1987) 483 U.S. 825, 837.* However, as the Coastal Commission otherwise had jurisdiction, the California Courts of Appeal did not apply the *Nollan* decision retroactively, holding the applicants lost their rights if the Commission's decisions were not appealed within 60 days.

Statute of Limitations Also at Issue

It would seem that when the Coastal Commission extorted people's property, the Commission should not be protected by the *de facto* jurisdiction concept, as the Commission was not acting pursuant to law. But what if the property taken has been fully developed? Should the Commission now have to pay for it? What if the dedicated property was never accepted by the state and is lying dormant?

Those questions raise the issue of the statute of limitations. Generally, a person who has been unconstitutionally treated must seek relief within one, two, three, or five years, depending on the nature of the unconstitutional act. Special state statutes, such as the Commission's 60-day rule, often will be ignored.

Sometimes a statute of limitations does not begin to run until the injured party becomes aware of the unlawful conduct. The constitutionality of the Coastal Commission will remain unknown until the California Supreme Court rules—most likely late this year or in early 2004.

Anyone presently dealing with the Coastal Commission should be protected by a finding of unconstitutionality of the Commission's structure, provided they bring a timely challenge to the Commission's action. They also should raise the separation of powers issue, although it is likely courts would allow this issue to be added once the Supreme Court rules.

There is no ability to proceed to the United States Supreme Court on this issue of constitutionality, as there are no federal issues present. Questions remain, however, as to the ruling on retroactivity, which could raise due process, takings, equal protection, or privileges and immunities issues under the federal Constitution and the Federal Civil Rights Act.

In any event, this cursory summary of issues is enough to illustrate the high risk under which the Commission and the legislature have placed themselves in seeking to preserve their domain. It is certainly a historic sequence of events upon which the California Supreme Court must now rule.

Ronald A. Zumbrun is managing attorney of The Zumbrun Law Firm, a Sacramento-based public issues firm.

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BOOK REVIEW

by S. Fred Singer

Poverty: Public Enemy #1

The Real Environmental Crisis:
Why Poverty, not Affluence, Is the Environment's Number One Enemy

Jack M. Hollander
University of California Press,
Berkeley, 2003
251 pages, cloth, $27.50

Professor Jack Hollander, an expert on energy and environment at the University of California - Berkeley, has produced a volume that charts a path to a better and more sustainable environment for the world's population. Eminently readable, Hollander's work makes the argument that poverty leads to pollution and stands in the way of its control. Not a new argument, but seldom has it been presented so well.

Hollander's chapters cover the adequacy of food supply, water and air pollution, and global warming. He offers a very sensible discussion of energy sources, from fossil fuels to solar and nuclear. All in all, it is a book that sticks to facts and avoids hype.

The facts presented and arguments advanced are very much in the spirit of Julian Simon and others. The important difference is that Hollander is an active scientist (not a statistician), author or coauthor of more than 100 research publications, and editor of 20 books, mostly dealing with energy and environmental topics. In the mid-1970s he served as the director of the first (and only) national energy study carried out by the National Academy of Sciences. He therefore brings great credibility to the debate between technological optimists and anti-technology doomsday prophets, whose voices have been amplified by the media.

Economic Growth Essential

The book makes the point that a global transition sparked by economic growth is essential in bringing about an environmentally sustainable world. It runs counter to the conventional argument, first enunciated by Malthus—and resurrected in 1972 by the Club of Rome's *Limits to Growth*—that an increasing standard of living of a growing population is unsustainable. Hollander's book, written for the non-expert public but with the credibility of a recognized expert, argues that this extreme pessimism is not justified by science, economics, demography, or history.

Environmental orthodoxy holds that an affluent society is a polluting society. But Hollander argues that affluence, while not guaranteeing a better environment, is a key ingredient—a necessary but not sufficient condition, if you will.

Hollander traces the rise of environmentalism and how it turned from conservation into an anti-technology movement with distrust of government, the oil companies, and the nuclear industry. The movement's transformation was spurred by many factors: advances in analytic chemistry, allowing for the detection of trace amounts of chemicals, the Viet Nam war, Rachel Carson's seminal book, *Silent Spring*.

Hollander cites as examples the unscientific ban on DDT and the anti-nuclear energy movement—spurred by reaction to nuclear weapons but transferred to an unreasonable fear of even minute amounts of radiation. I would have included opposition to supersonic transport aircraft, which spawned concern about the stratospheric ozone layer and led to the adoption of the Montreal Protocol, the first international agreement to ban certain chemicals.

Optimistic Future

After this introduction, the book follows a logical course. It starts by describing the environmental problems of the poor—unable to deal with pollution until they acquire enough affluence to meet their basic needs for survival.

This leads Hollander to a discussion of population growth, which he views optimistically. With falling fertility rates everywhere, Hollander notes, "it should no longer be looked upon as a serious long-term global problem." Similarly, the food problem is illusionary; the existing surplus will increase in the Second Green Revolution thanks to advances in biotech. Hollander also addresses anti-biotech opinion based on the "precautionary principle."

Hollander's outlook is not quite so sanguine for world fisheries; nearly a quarter are badly overfished or completely depleted. The answer, he explains, has to be sought in better institutional arrangements that assign property rights. But that is difficult to do for the poor in coastal regions who depend on fish for survival. Again, technology can help, in the form of aquaculture.

The book describes the remarkable progress in water and air quality in affluent nations where only a century ago drinking water was generally not safe, and 50 years ago killer smogs were common. [I survived the 1952 episode in London; it was not pleasant.] But once these basic health goals are achieved, it becomes important to decide just "how clean is clean enough?"

In principle, cost-benefit analysis can address such questions but faces problems of both data and politics. Hollander does not delve into what really drives the politics, especially of air pollution, acid rain, and stratospheric ozone depletion. These are often driven by ideology rather than by science or economics.

Energy Abundance

When turning to energy sources in the last part of the book, Hollander correctly notes there was never an oil crisis in 1973, and certainly no shortage. In opposition to those who see oil production peak before 2010 [as, for example, Princeton's Prof. Deffeyes in his book, *Hubbert's Peak*], Hollander sees no problems in the foreseeable future. I think he is right in that there are vast resources of heavy oil and tar sands still to be exploited.

For oil as a transportation fuel, the efficiency of automobiles is of prime importance. Hollander presents a realistic appraisal of the hybrid-electric car and the eventual fuel cell car. He shows coal consumption growing steadily.

When it comes to renewables, solar energy is "free but not cheap." Its contribution to the country's overall energy mix is increasing slowly, thanks to an array of generous government subsidies. Nuclear fission energy based on uranium, notes Hollander, is quasi-renewable. Opposition to nuclear energy is largely emotional, based on irrational fears of low-level nuclear radiation.

Warming Fears Overstated

Hollander gives a most expert discussion of climate change in the chapter titled "Is the Earth Warming?" With the ongoing increase in atmospheric greenhouse gases, one would expect some warming to occur; but it is difficult to discern a small human contribution in the presence of large natural temperature variations. Hollander mentions the difficult-to-explain cooling observed between 1940 and 1975 and the apparent lack of atmospheric warming in the last 20 years as recorded by satellite data. He thus reaches the inescapable conclusion that the human contribution is much weaker than expected from a simple warming theory that does not address the complexity of the real atmosphere.

The consequences of a possible warming are not necessarily bad, Hollander further notes, and the remedies suggested by the Kyoto Protocol would achieve negligible results at a huge cost. Informed estimates put the cost to the U.S. economy at $2.3 trillion over the next decades—about twice the cost for all other nations combined.

At first glance, climate change does not seem to fit Hollander's paradigm. The problem of global warming—if indeed it is a problem—would not disappear if world poverty were cured. Indeed, one can argue affluence would make global warming worse. This seems to be the secret belief of the environmental elite.

But that is an illusion. The "problem" of climate change—whether warming or cooling, natural or man-made—can best be met by adjustment. And adjustment becomes easier with affluence and more difficult with poverty. Witness the impact of floods, droughts, hurricanes, earthquakes, or any other disaster on less-developed nations.

The remedies against greenhouse warming being peddled by environmental activists—the energy-rationing schemes of the Kyoto Protocol and the even more stringent measures to follow after 2012—would destroy economic growth and tend to make us as poor as the rest of the world. Instead, we should be helping the rest of the world become as rich as we are.

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